ORDER NO.VMD0109024C8

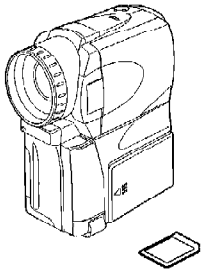
Service Manual

Digital Video Camera/Recorder & Battery Adaptor

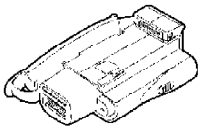
Panasonic Mini DV PAL MultiMediaCard™ SD

NV-EX21EG
NV-EX21B
NV-EX21EN
NV-EX21A
VSK0605

Q3-MECHANISM



NV-EX21



VSK0605

SPECIFICATIONS

Digital Video Camera

ITEM	SPECIFICATION	ITEM	SPECIFICATION
POWER	Source: DC 7.9 / 7.2 V Consumption: Recording 4.6 W (When using Viewfinder) 5.5 W (When using LCD Monitor)	STANDARD ILLUMINATION	1,400 lx
		MINIMUM REQUIRED ILLUMINATION	1 lx (Digital Gain-up Mode)
RECORDING FORMAT	Mini DV (Consumer-use Digital Video SD Format)	USB	Card reader / writer function, USB 1.1 compliant (maximum 12Mbps)
TAPE USED	6.35 mm digital video tape	DIGITAL STILL PICTURE	Digital Still Picture Output, Control Signal Input / Output (Transfer rate: max. 115 kbps)
RECORDING / PLAYBACK TIME	SP mode: 80 min. with DVM80 LP mode: 120 min. with DVM80	DIGITAL INTERFACE	DV Input/Output Terminal (i.LINK, 4 - pin)
CAMERA	Filter Diameter: 37 mm		
	Zoom: 10:1 Power Zoom	MICROPHONE	Stereo
	Monitor: 2.5-inch LCD	SPEAKER	1 round speaker ϕ16 mm
	Lens: Auto Iris, F1.8, Focal Length; 3.55 - 35.5 mm Macro (Full Range AF)	OPERATING TEMPERATURE	0 - 40 °C
	Image Sensor: 1/3.8-inch CCD Image Sensor	OPERATING HUMIDITY	10 - 80 %
	Viewfinder: Colour Electronic Viewfinder		
VIDEO	Recording System: Digital Component	WEIGHT	Approx. 490 g(without Battery and DV Cassette) Approx. 555 g(with CGA-D07S and DVM60)
	Television System: CCIR; 625 Lines, 50 Fields PAL Colour Signal	DIMENSIONS	Approx. 50 (W) x 115 (H) x 105.5 (D) mm
	Video Output Level: 1.0 Vp-p, 75Ω S-Video Output Level: Y Output; 1.0 Vp-p, 75Ω C Output; 0.3 Vp-p, 75Ω Video Input Level: 1.0 Vp-p, 75Ω S-Video Input Level: Y Input; 1.0 Vp-p, 75Ω C Input; 0.3 Vp-p, 75Ω	STANDARD ACCESSORIES	1 pc. AC Adaptor 1 pc. Battery Pack Unit 1 pc. Battery Adaptor 1 pc. DC Cable 1 pc. AC Cord 1 pc. AV Cable 1 pc. Remote Controller 1 pc. Bottom-type Battery 1 pc. Head Cleaner ; NV-EX21EN/A 1 pc. Hood Cap Unit 1 pc. Driver Soft 1 pc. Lens Hood 1 pc. USB Connection Cable; NV-MX8 1 pc. SD CARD
AUDIO	Recording System: PCM Digital Recording 16 bit (48 kHz/2 ch) 12 bit (32 kHz/4 ch) Audio Output Level (Line): 316 mV, 600Ω Audio Input Level (Line): 316 mV, 10 kΩ or more		
CARD MEMORY FUNCTIONS	Recording Media: SD Memory Card, MultiMediaCard Image Compression: JPEG Video Compression: MPEG4 Sound Compression: G.726		

Battery Adaptor

ITEM	SPECIFICATION	ITEM	SPECIFICATION
POWER	Source: DC 7.9 / 7.2 V Consumption: 3.7 W (When using Viewfinder) 4.6 W (When using LCD Monitor)	AUDIO	Audio Output Level (Line): 316 mV, 600Ω
		VIDEO	Video Output Level: 1.0 Vp-p, 75Ω
VIDEO FLASH	GN 6	<SD Camera Style> WEIGHT	Approx. 300 g(without Battery) Approx. 345 g(with CGA-D07S)
MICROPHONE	Monaural	<SD Camera Style> DIMENSIONS	52 (W) x 77 (H) x 105.5 (D) mm

Weight and dimensions are approximate values.
Specifications may change without prior notice.

Panasonic

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MC-Service

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

CONTENTS

Page

1 INTRODUCTION ··· **3**
1.1. INTRODUCTION ··· 3
2 CAUTION FOR AC CORD (VJA0940 TYPE) ··· **4**
2.1. INFORMATION FOR YOUR SAFETY ··· 4
2.2. CAUTION FOR AC MAINS LEAD ··· 4
3 SERVICE CAUTION ··· **5**
3.1. EEPROM DATA FOR SPARE PARTS OF THE MAIN C.B.A. ··· 5
3.2. SERVICE EXTENSION CABLES. ··· 5
3.3. LOCATION FOR SPARE CONNECTORS OF THE MAIN C.B.A., CAMERA C.B.A. & DSC C.B.A. ··· 7
4 PREPARATION FOR ELECTRICAL ADJUSTMENT ··· **10**
5 SERVICE MODE ··· **12**
5.1. New Error Code Display ··· 12
5.2. Viewing Error Code ··· 12
6 HOW TO REPLACE THE LITHIUM BATTERY (PROCEDURE) **13**
7 OPERATING GUIDE ··· **14**
8 ADJUSTMENT PROCEDURES ··· **18**
8.1. DISASSEMBLE FLOW CHART ··· 18
8.2. DISASSEMBLY PROCEDURES ··· 19
8.3. DISASSEMBLY PROCEDURES OF CAMERA LENS UNIT ··· 27
9 ABBREVIATIONS ··· **28**
10 WAVEFORM TABLE ··· **35**
11 SCHEMATIC DIAGRAMS ··· **37**
11.1. OVERALL SCHEMATIC DIAGRAM ··· 37
11.2. INTERCONNECTION SCHEMATIC DIAGRAM ··· 38
11.3. CCD FLEX. CARD SCHEMATIC DIAGRAM ··· 40
11.4. JACK FLEX. CARD SCHEMATIC DIAGRAM ··· 40
11.5. TOP FLEX. UNIT SCHEMATIC DIAGRAM ··· 40
11.6. CAMERA CASE (R) UNIT (VTR OPERATION FLEX.) SCHEMATIC DIAGRAM ··· 40
11.7. SIDE (L) OPERATION FLEX. UNIT SCHEMATIC DIAGRAM ··· 41
11.8. CARD EVF RELAY FLEX. SCHEMATIC DIAGRAM ··· 41
11.9. REMOTE CONTORL & TALLY FLEX. SCHEMATIC DIAGRAM ··· 41
11.10. IR SENSOR SCHEMATIC DIAGRAM ··· 41
11.11. DV REAR OPERATION UNIT SCHEMATIC DIAGRAM ··· 42
11.12. CASSETTE DOWN FLEX. SCHEMATIC DIAGRAM ··· 42
11.13. DSC MULTI UNIT SCHEMATIC DIAGRAM ··· 42
11.14. VTR MULTI UNIT SCHEMATIC DIAGRAM ··· 43
11.15. EVF & EVF BL FLEX. UNIT SCHEMATIC DIAGRAM ··· 44
11.16. MONITOR & HALL SENSOR FLEX. CARD SCHEMATIC DIAGRAM ··· 45

Page

12 CIRCUIT BOARD ASSEMBLIES ··· **47**
12.1. CCD FLEX. CARD C.B.A. ··· 47
12.2. IR SENSOR C.B.A. ··· 47
12.3. EVF C.B.A. ··· 47
12.4. MONITOR C.B.A. ··· 48
13 EXPLODED VIEWS ··· **49**
13.1. FRAME & CASING SECTION (1) ··· 49
13.2. FRAME & CASING SECTION (2) ··· 50
13.3. LCD SECTION ··· 51
13.4. CAMERA LENS SECTION ··· 52
13.5. PACKING PARTS & ACCESSORIES SECTION ··· 53
14 REPLACEMENT PARTS LIST ··· **54**
14.1. FRAME & CASING SECTION (1) PARTS LIST ··· 54
14.2. FRAME & CASING SECTION (2) PARTS LIST ··· 55
14.3. LCD SECTION PARTS LIST ··· 55
14.4. CAMERA LENS SECTION ··· 55
14.5. PACKING PARTS &ACCESSORIES SECTIONPARTS LIST ··· 56
14.6. ELECTRICAL REPLACEMENT PARTS LIST ··· 56
15 ADJUSTMENT PROCEDURES:BATTERY ADAPTOR (VSK0605) ··· **60**
15.1. DISASSEMBLE FLOW CHART ··· 60
15.2. DISASSEMBLY PROCEDURES ··· 61
15.3. ELECTRICAL ADJUSTMENT ··· 65
16 SCHEMATIC DIAGRAMS:BATTERY ADAPTOR (VSK0605) ··· **67**
16.1. AV/HP JACK FLEX. UNIT SCHEMATIC DIAGRAM ··· 67
16.2. ADAPTOR REAR OPERATION UNIT SCHEMATIC DIAGRAM ··· 67
16.3. MULTI CONNECTOR SCHEMATIC DIAGRAM ··· 67
16.4. BATTERY ADAPTOR CONNECTION SCHEMATIC DIAGRAM ··· 68
16.5. SD POWER SCHEMATIC DIAGRAM ··· 69
16.6. STROBE SCHEMATIC DIAGRAM ··· 71
16.7. VOICE MIC SCHEMATIC DIAGRAM ··· 72
16.8. AV HP OUT SCHEMATIC DIAGRAM ··· 72
17 CIRCUIT BOARD ASSEMBLIES:BATTERY ADAPTOR (VSK0605) ··· **73**
17.1. BATTERY ADAPTOR C.B.A. ··· 73
18 EXPLODED VIEWS:BATTERY ADAPTOR (VSK0605) ··· **75**
18.1. BATTERY ADAPTOR SECTION ··· 75
19 REPLACEMENT PARTS LIST : BATTERY ADAPTOR (VSK0605) ··· **76**
19.1. BATTERY ADAPTOR SECTION PARTS LIST ··· 76
19.2. ELECTRICAL REPLACEMENT PARTS LIST ··· 76

1 INTRODUCTION

1.1. INTRODUCTION

This service manual contains technical information which will allow service personnel's to understand and service this model.Please place orders using the parts list and not the drawing reference numbers.

If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.

Note 1:

These movie cameras use AC Adaptor is VSK0592.

The service manual for AC Adaptor is separate volume.

Order number for AC Adaptor.....VSK0592: VMD0009025C8

Note 2:

This service manual does not contain the following information, because of the impossibility of sevicing at component level.

1. Schematic Diagram, Block Diagram and C.B.A. layout of Main C.B.A./ Camera C.B.A./DSC C.B.A.
2. Parts List for individual parts of Main C.B.A./ Camera C.B.A./DSC C.B.A.
3. Exploded View and Parts List for individual parts of Mechanism Unit.

When a part replacement is required for repairing each Main C.B.A. and/ or Mechanism block, replace the assembly parts. (Main C.B.A., Camera C.B.A., DSC C.B.A. and/ or Mechanism Unit)

The following circuits are contained in Main C.B.A.

1. VTR Connection Circuit
2. Drive Circuit
3. Video 1 Circuit
4. Video 2 Circuit
5. VTR CONTROL Circuit
6. VTR LVDS Circuit
7. Ex Input Circuit
8. Head/ Rec Amp Circuit
9. Power Circuit

The following circuits are contained in Camera C.B.A.

1. Camera Connection Circuit
2. Lens Drive Circuit
3. Camera Circuit
4. Mic Circuit
5. Timer Circuit
6. SD Audio Circuit
7. Speaker Amp Circuit

The following circuits are contained in DSC C.B.A.

1. DSC Connection Circuit
2. LCD Circuit
3. MEGA IF Circuit
4. DSC Circuit
5. Camera Control Circuit
6. Camera LVDS Circuit

2 CAUTION FOR AC CORD (VJA0940 TYPE)

2.1. INFORMATION FOR YOUR SAFETY

IMPORTANT

Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING

To reduce the risk of fire or shock hazard, do not expose this equipment to rain or moisture.

CAUTION

To reduce the risk of fire or shock hazard and annoying interference, use the recommended accessories only.

FOR YOUR SAFETY

DO NOT REMOVE THE OUTER COVER

To prevent electric shock, do not remove the cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

2.2. CAUTION FOR AC MAINS LEAD

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three-pin mains plug for your safety and convenience.

A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amperes and it is approved by ASTA or BSI to BS1362

Check for the ASRA mark or the BSI mark on the body of the fuse.

ASTA mark	BSI mark

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

If the fitted moulded plug is unsuitable for the socket outlet in your home then the fuse should be removed and the plug cut off and disposed of safety.

There is a danger of severe electrical shock if the cut off plug is inserted into any 13-ampere socket.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt, please consult a qualified electrician.

2.2.1. Important

The wires in this mains lead are coloured in accordance with the following code:

Blue	Neutral
Brown	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

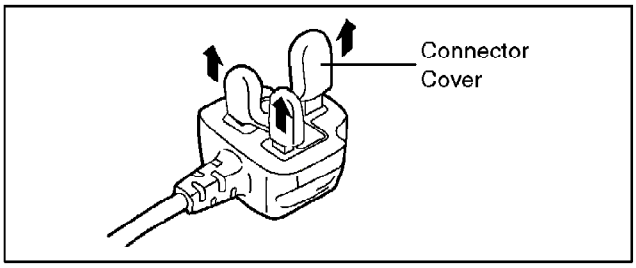
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol.

Earth Symbol	⏚

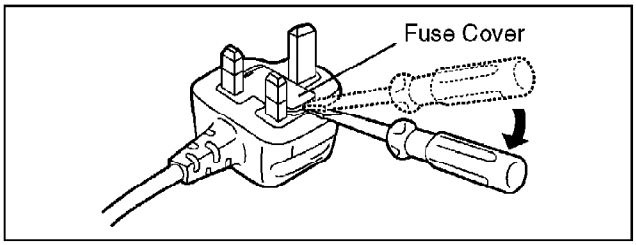
2.2.2. Before use

remove the Connector Cover as follows.

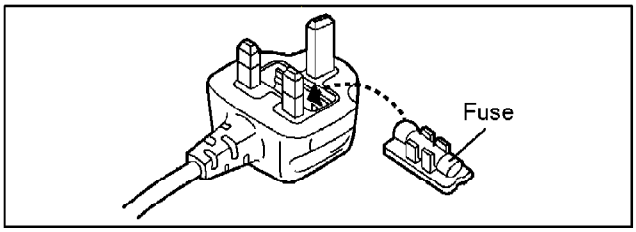


2.2.3. How to replace the Fuse

1. Remove the Fuse Cover with a screwdriver.



2. Replace the fuse and attach the Fuse cover.



3 SERVICE CAUTION

3.1. EEPROM DATA FOR SPARE PARTS OF THE MAIN C.B.A.

When the Main C.B.A. is replaced, the fixed and average data must be changed by Tatsujin kit according to the Movie Camera's suffix.

Then, confirm and/or adjust the VTR and Camera section one by one.

3.2. SERVICE EXTENSION CABLES.

This models is required the following extension cables for all connections.

Note 1:

Use the following extension cables when checking or adjusting individual circuit boards except module Parts.

(Main C.B.A., Camera C.B.A. and DSC C.B.A.)

Ref.	Part No.	Pin	Part Name	Connection	Q'ty	Remarks
(1)	VFK1459	39	Flat Cable	FP603 (DSC) - Card EVF Relay	1	as NV-EX1
(2)	VFK1442	21	Flat Cable	FP6505 (DSC) - Side (L) Operation	1	as NV-DS77
(3)	VFK1452	17	Flat Cable	FP602 (DSC) - FP903 (Monitor)	1	as NV-DS77
(4)	VFK1452	17	Flat Cable	FP601 (DSC) - FP904 (Monitor)	1	as NV-DS77
(5)	VFK1460	20	Flat Cable	PS201 (Camera) - PP291 (CCD Flex.Card)	1	as NV-EX1
(6)	VFK1491	27	Flat Cable	FP701 (Camera) - Lens Unit	1	as NV-DS99
(7)	VFK1440	10	Flat Cable	FP6506 (DSC) - VTR Operation	1	as NV-DS77
(8)	VFK1704	74	Wire Cable	PP6502 (VTR Multi) - PP6503 (DSC Multi)	1	New

How to use extension cables.

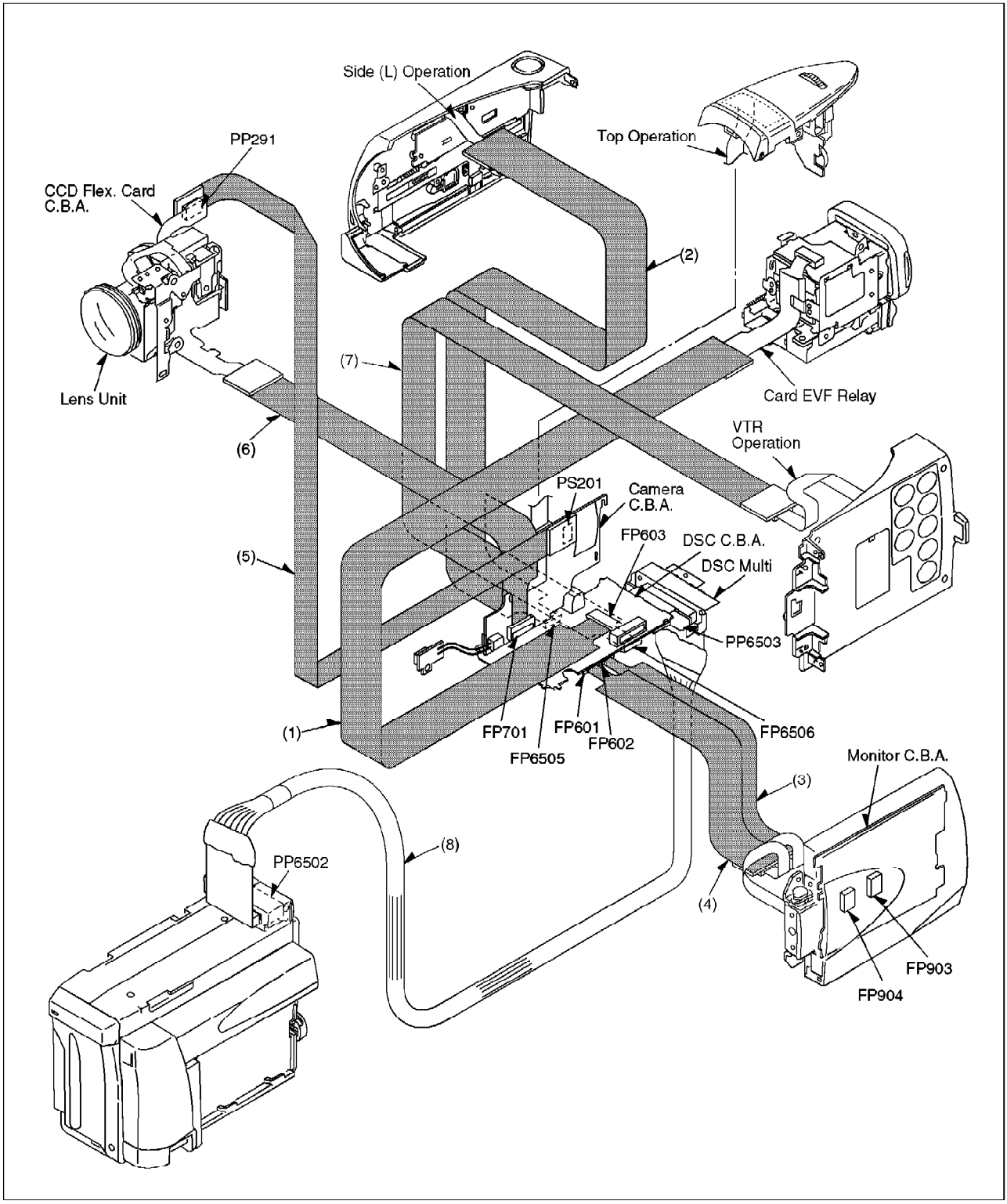
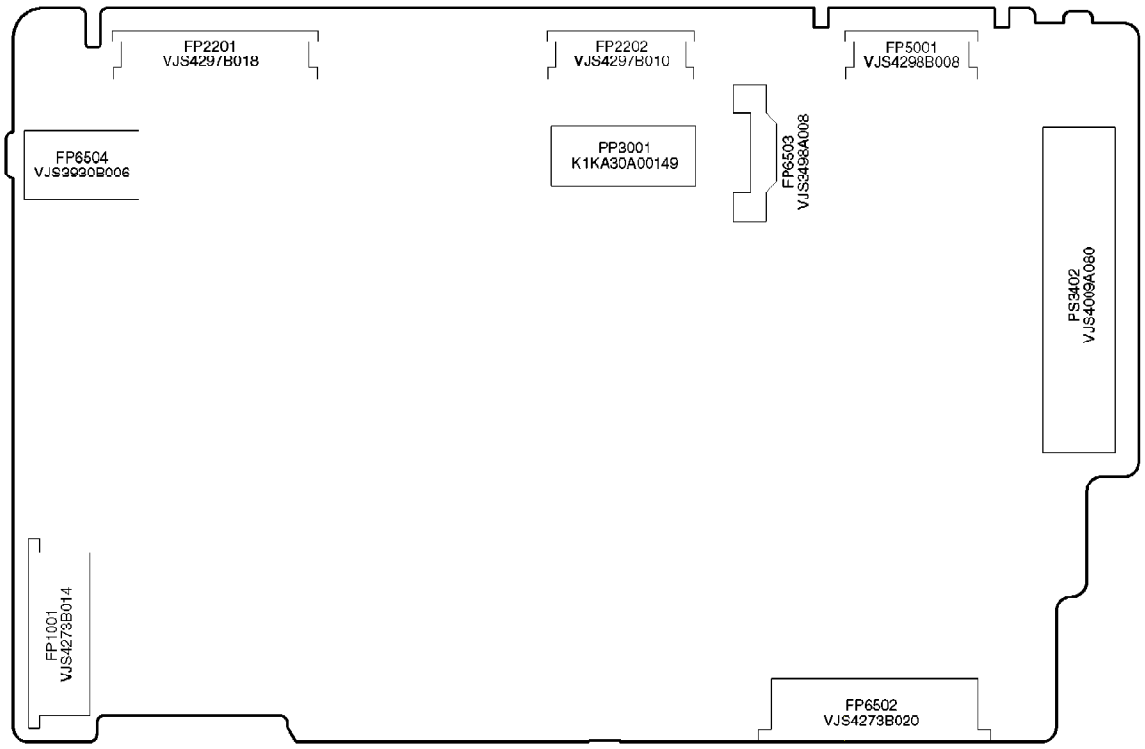


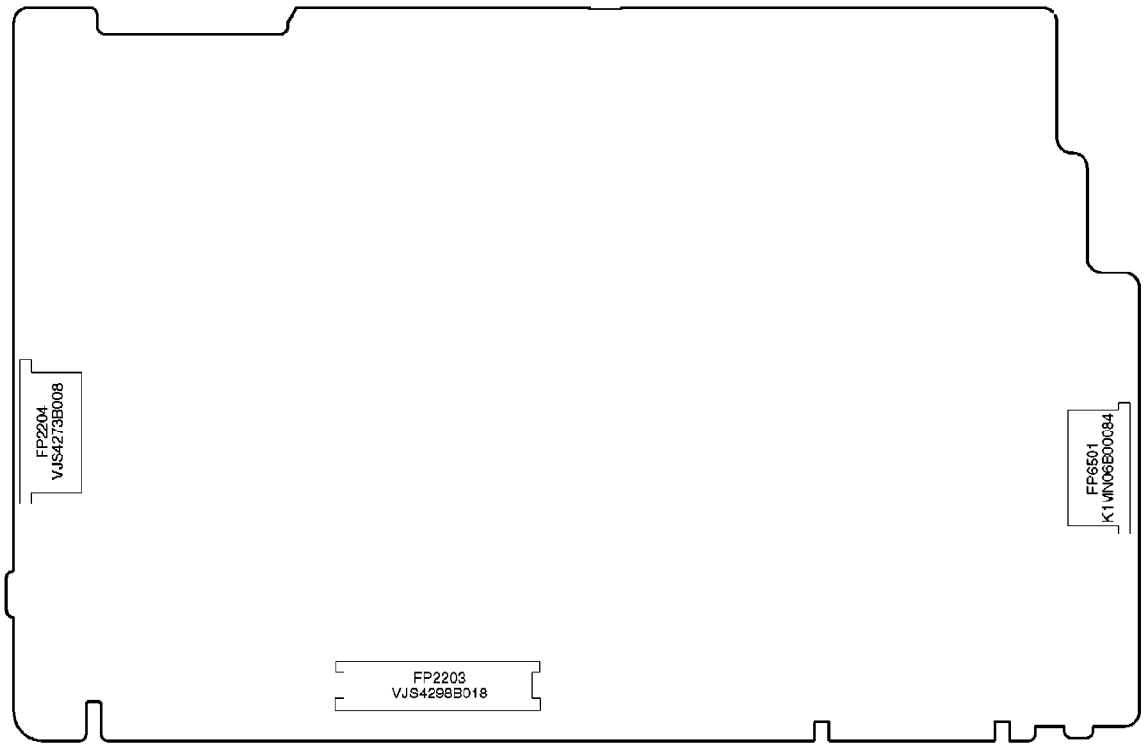
Fig. T1-1

3.3. LOCATION FOR SPARE CONNECTORS OF THE MAIN C.B.A., CAMERA C.B.A. & DSC C.B.A.

3.3.1. MAIN C.B.A.

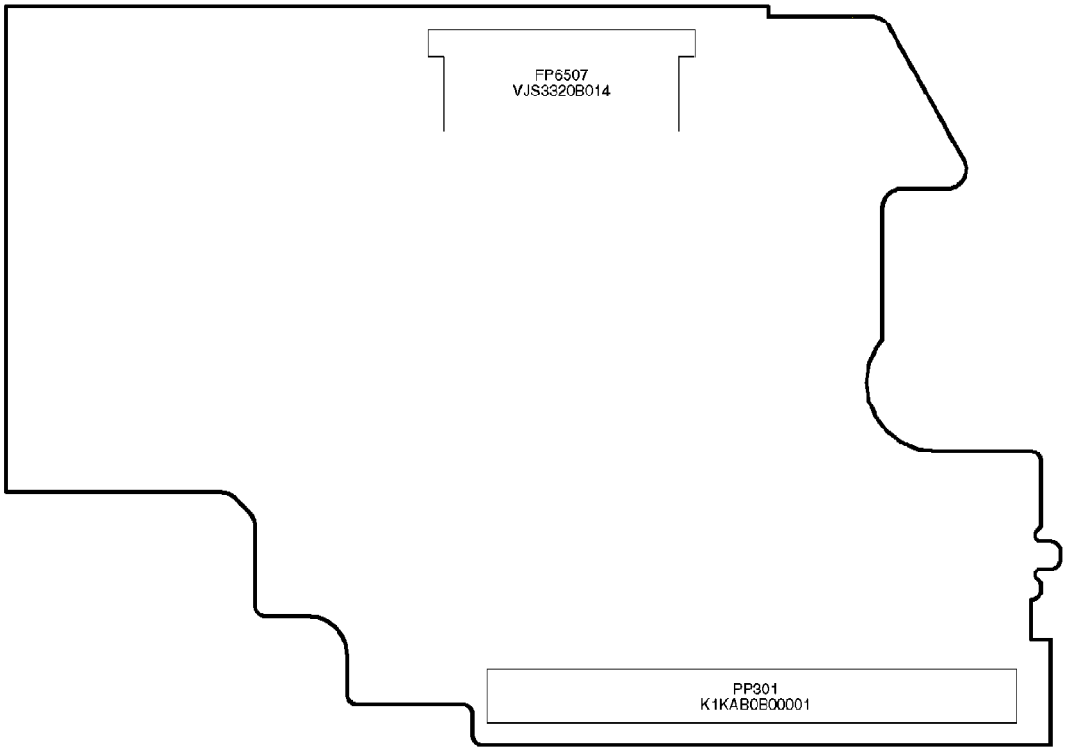


(COMPONENT SIDE)

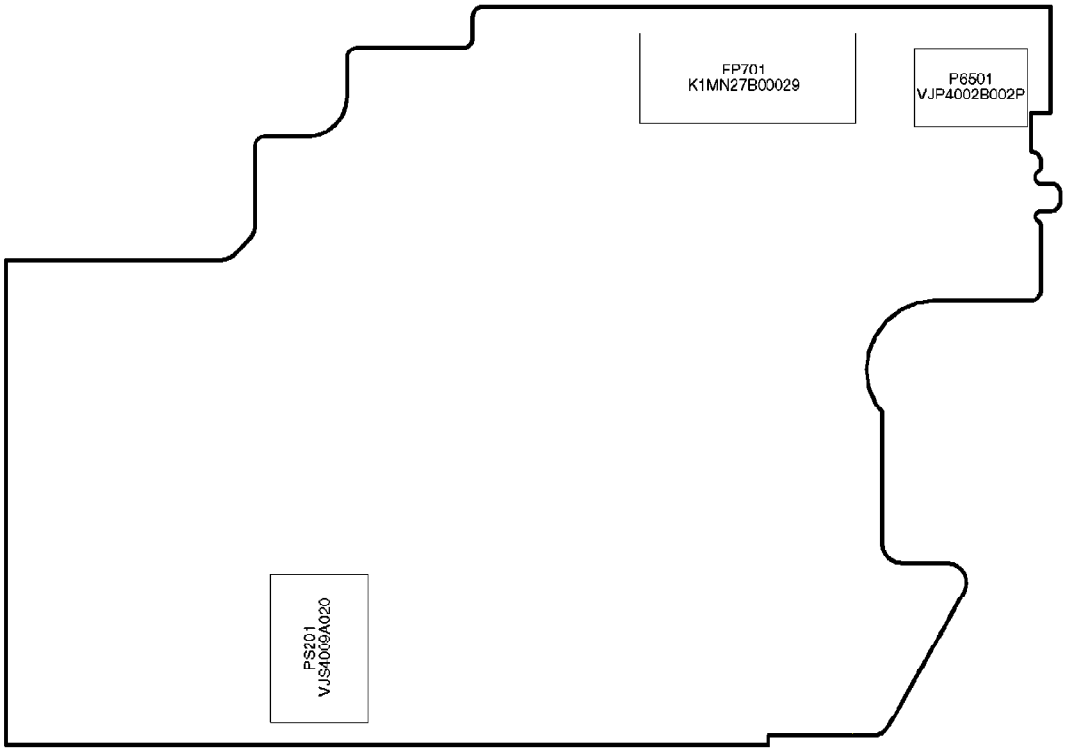


(FOIL SIDE)

3.3.2. CAMERA C.B.A.

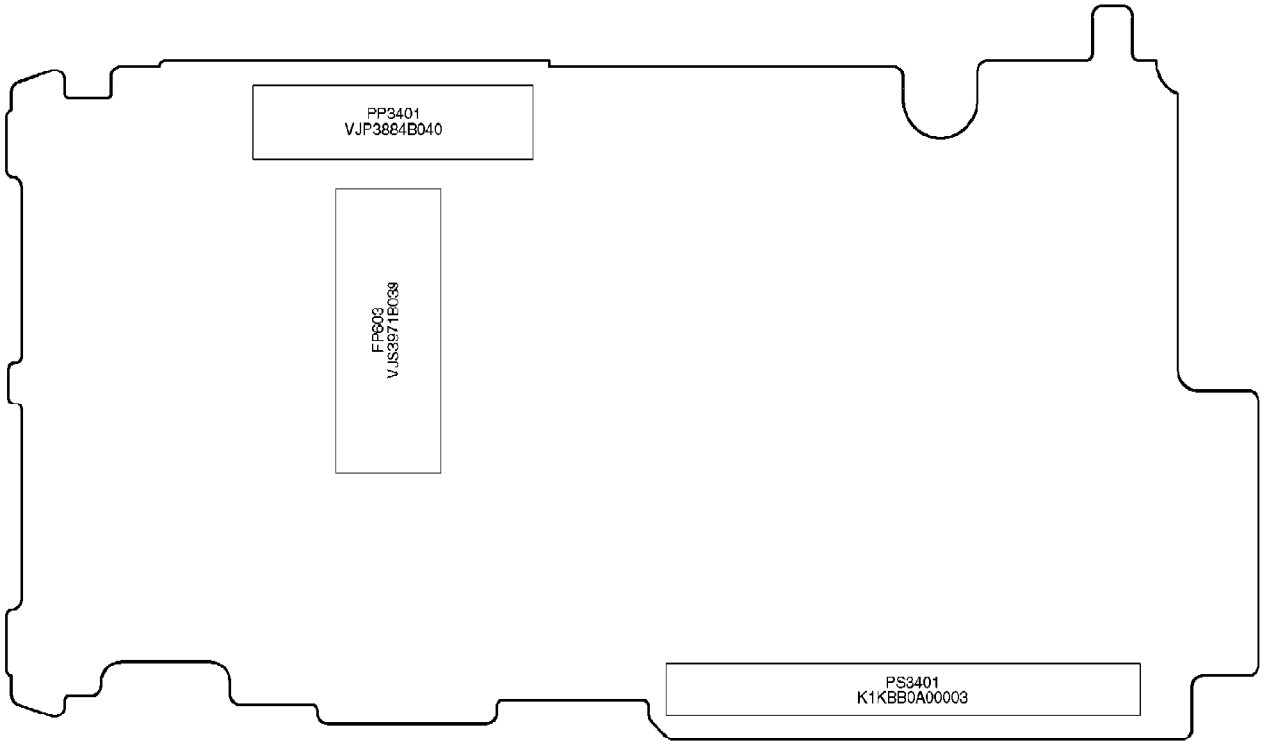


(COMPONENT SIDE)

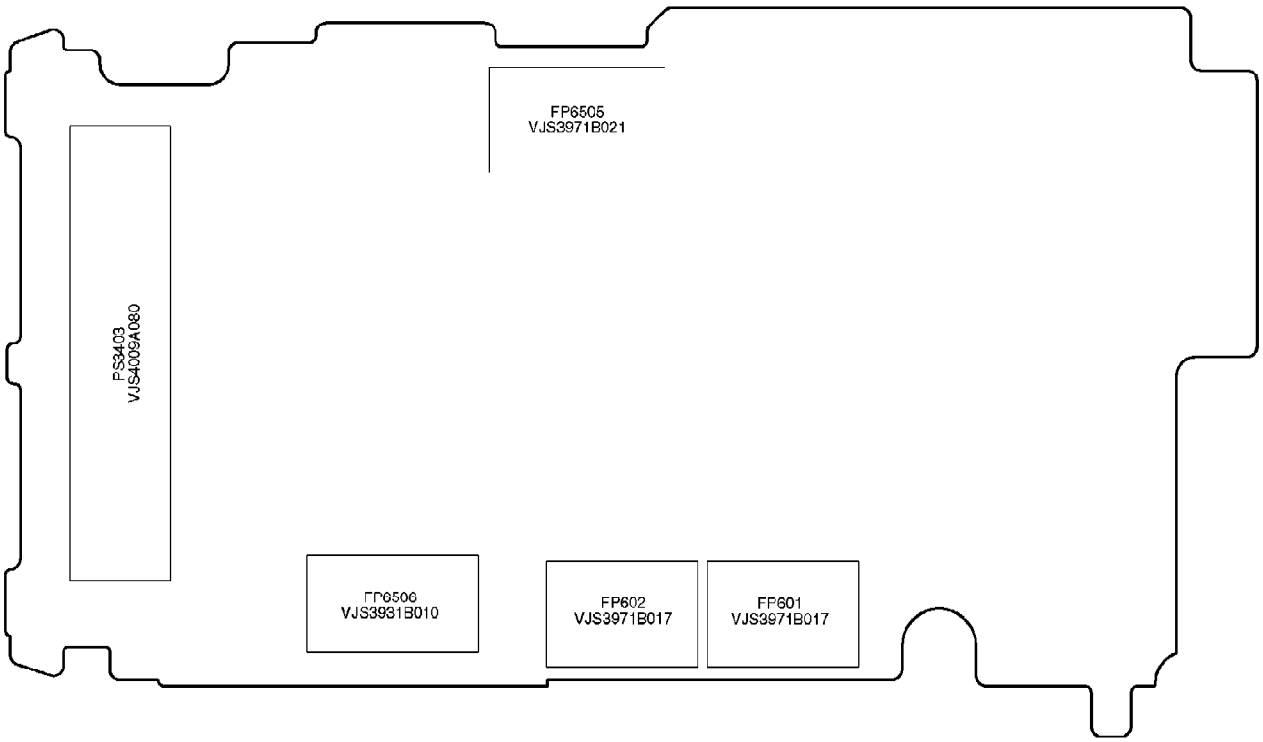


(FOIL SIDE)

3.3.3. DSC C.B.A.



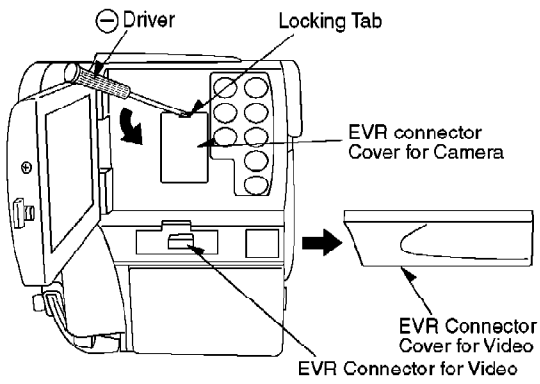
(COMPONENT SIDE)



(FOIL SIDE)

4 PREPARATION FOR ELECTRICAL ADJUSTMENT

1. Unlock the locking tab and remove the EVR connector as shown in Fig. E1 .
2. Then connect the following cables as shown in Fig. E2 .



<CAMERA>
1.Unlock the locking tab and remove the EVR Connector Cover which is located on Camera Case (R) Unit as follows.

<VIDEO>
1.Slide EVR Connector Cover and remove the EVR Connector Cover as follows.

Fig. E1

Part No.	Part Name	Q'ty	New	Remarks
VFK1395	232C (M3) I/F Cable	1	—	
VFK1308E	Measuring Board	1	—	
VFK1309	EVR Connector Board	1	—	
VFK1317 or VFK1511	30 Pin Flat Cable	2	—	200mm Type 300mm Type
VJA0941	DC Output Cable	1	—	For AC Adaptor
VFK1164TAR37	Step up Ring	1	—	For Collimator
VFK1709	EVR Connection Board	1	—	
VFK1712	20 Pin Flat Cable	2	1	for Camera Adjustment
VFK1711	Camera Connector Board	1	1	for Camera Adjustment
VFK1713	30 Pin Flat Cable	1	1	for Video Adjustment
VFK1710	Video Connector Board	1	1	for Video Adjustment
VFK1714	Connection Adaptor	1	1	for Video Adjustment

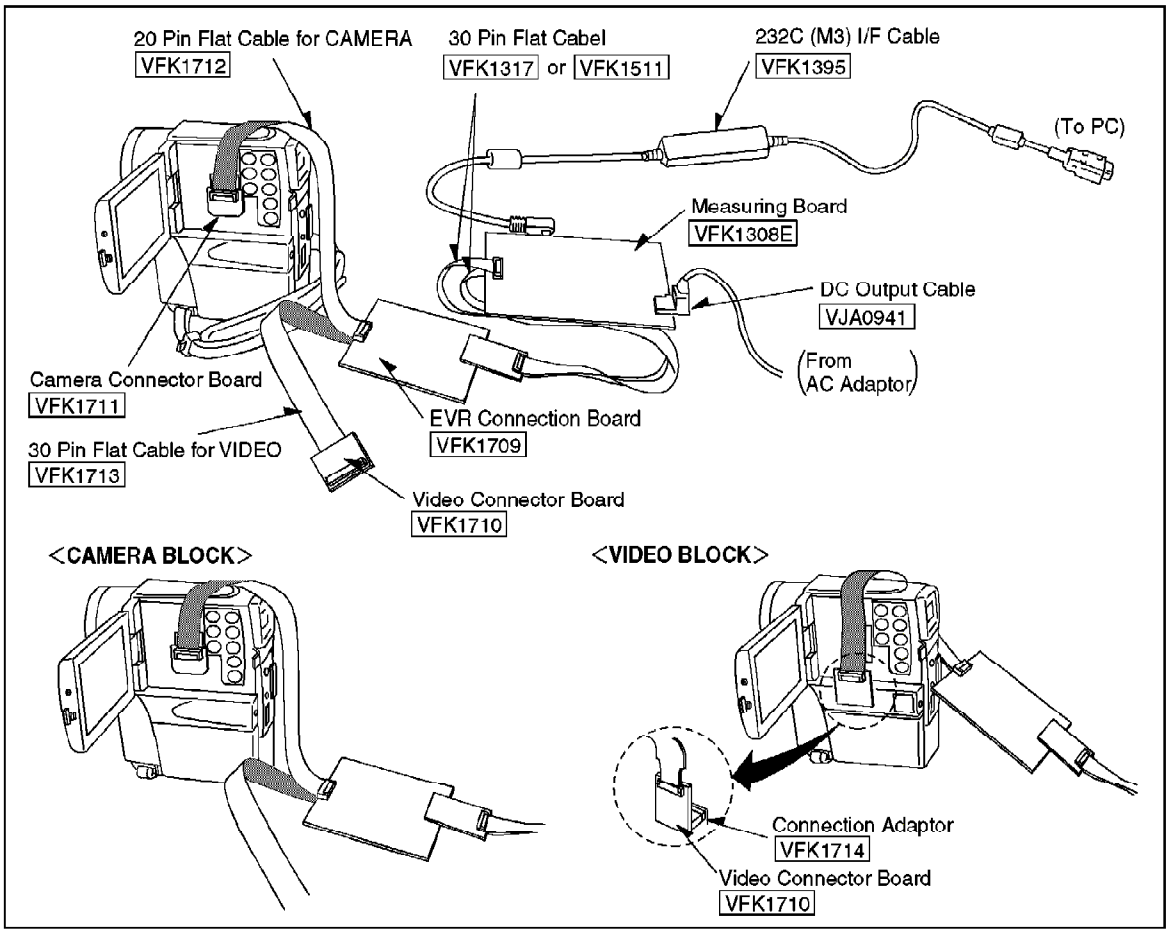


Fig. E2

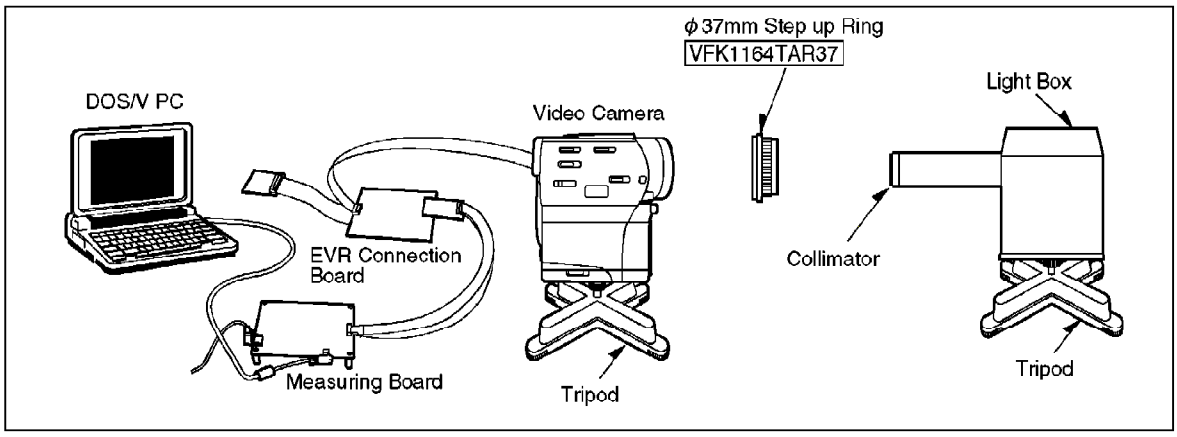

ϕ37mm Step up Ring
VFK1164TAR37
DOS/V PC
Video Camera
Light Box
EVR Connection Board
Collimator
Measuring Board
Tripod
Tripod

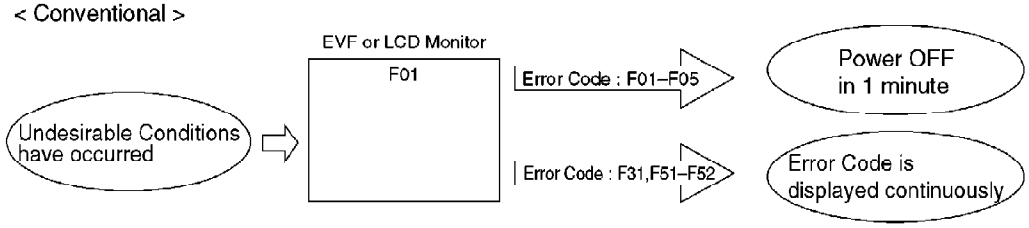
Fig. E3

5 SERVICE MODE

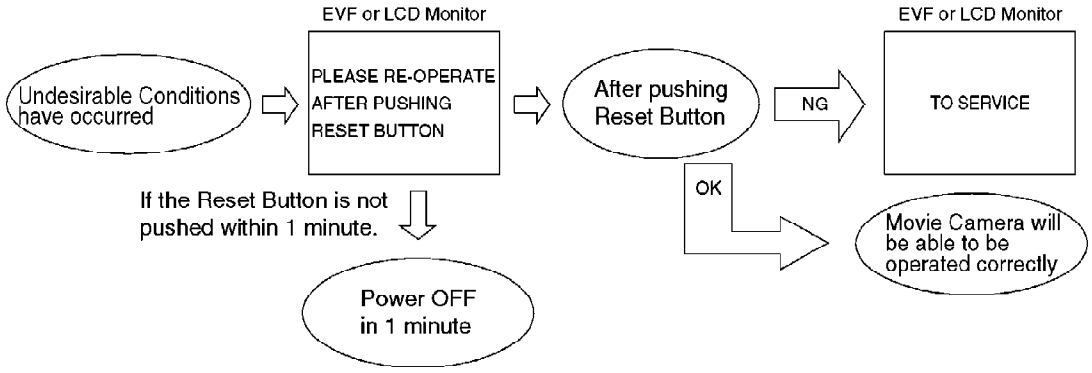
5.1. New Error Code Display

Conventionally, the error code has been displayed automatically on the EVF or LCD Monitor when undesirable conditions have occurred. With the New Error Code Display, the error code has not been displayed automatically as follows except some error codesF31(Data Transmission Error), U10(Dew) and U11(Head Clogging).

< Conventional >



< New >


EVF or LCD Monitor
PLEASE RE-OPERATE AFTER PUSHING RESET BUTTON
Undesirable Conditions have occurred
After pushing Reset Button
NG
EVF or LCD Monitor
TO SERVICE
OK
Movie Camera will be able to be operated correctly
If the Reset Button is not pushed within 1 minute.
Power OFF in 1 minute

Note:

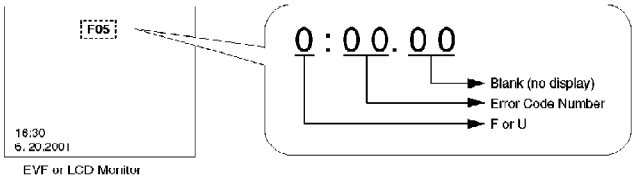
1. The only some error codes F31, U10 and U11 has displayed automatically on the EVF or LCD monitor as usual.
2. The Power LED also has been flashed for 1 min. when undesirable condetions have occurred.(See below)

5.2. Viewing Error Code

When displaying the Error Code on the EVF or LCD Monitor, push the FADE/STOP and REC START/PAUSE buttons simultaneously for more 3 seconds.

Note:

When the cassette tape is inserted, this operation will not be worked.



DISPLAY	CONDITION	POWER OFF TIMING / POWER LED FLASHING TIMING
F01	T-Reel Lock	After 1 minute flashing the LED
F02	S-Reel Lock	After 1 minute flashing the LED
F03	Unloading Lock	After 1 minute flashing the LED
F04	Loading Lock	After 1 minute flashing the LED
F05	Cylinder Lock	After 1 minute flashing the LED
F31	Data Transmission Error	Not turning OFF
F51	Zoom Motor Lock	Not turnig OFF Power LED is flashed at 1 Hz timing
F52	Focus Motor Lock	Not turnig OFF Power LED is flashed at 1 Hz timing
U10	Dew Detection	After 18 seconds flashing the LED Power LED is flashed at 1 Hz timing
U11	Head Clogging	Not turning OFF

6 HOW TO REPLACE THE LITHIUM BATTERY (PROCEDURE)

1. Remove the Top Flex. Unit. (Refer to Disassembly Procedures.)
2. Unsolder the Lithium Battery "VSB0407" and then replace the new one. (See Fig. B1 .)

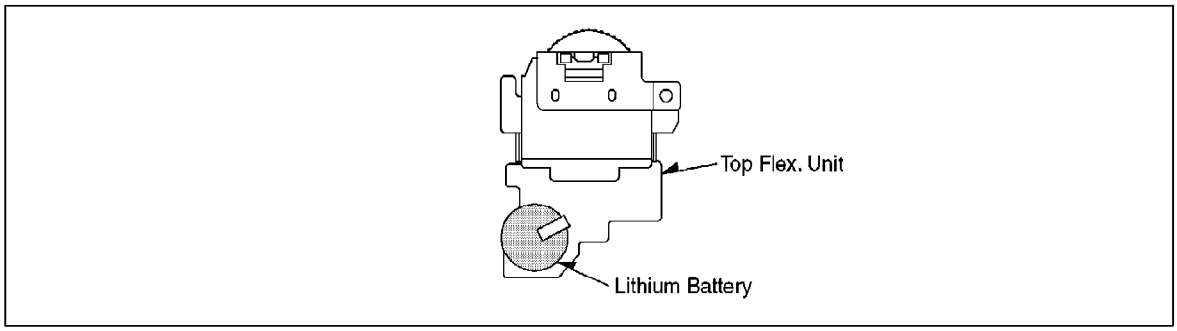


Fig. B1

Note:

The lithium battery is a critical component. (Type No.: VSB0407 Manufactured by Panasonic.)

It must never be subjected to excessive heat or discharge.

It must therefore only be fitted in equipment designed specifically for its use.

Replacement batteries must be of the same type and manufacture.

They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.

Do not attempt to re-charge the old battery or re-use it for any other purpose.

It should be disposed of in waste products destined for burial rather than incineration.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

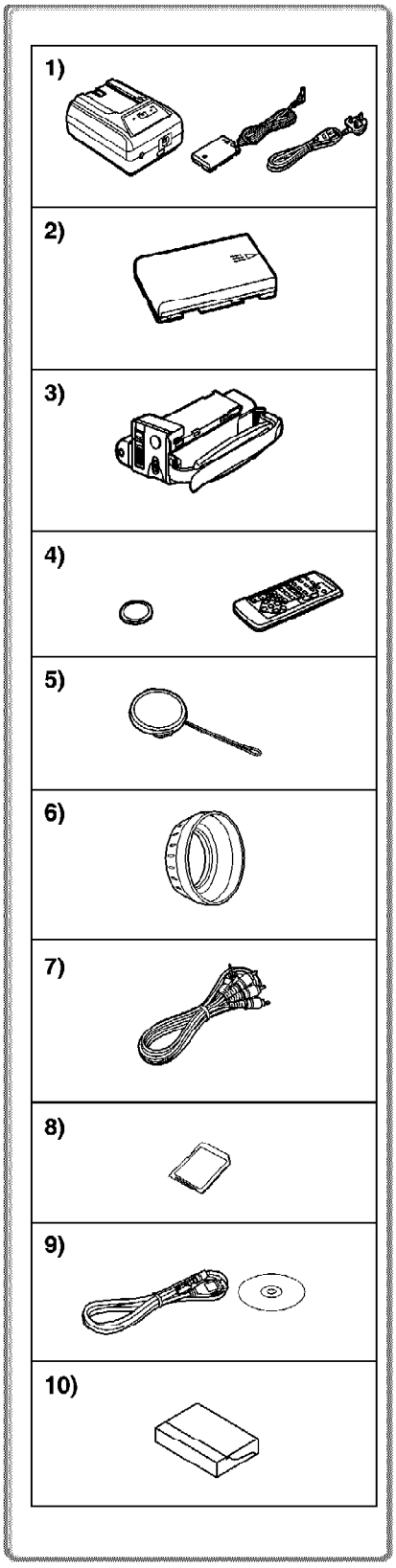
ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

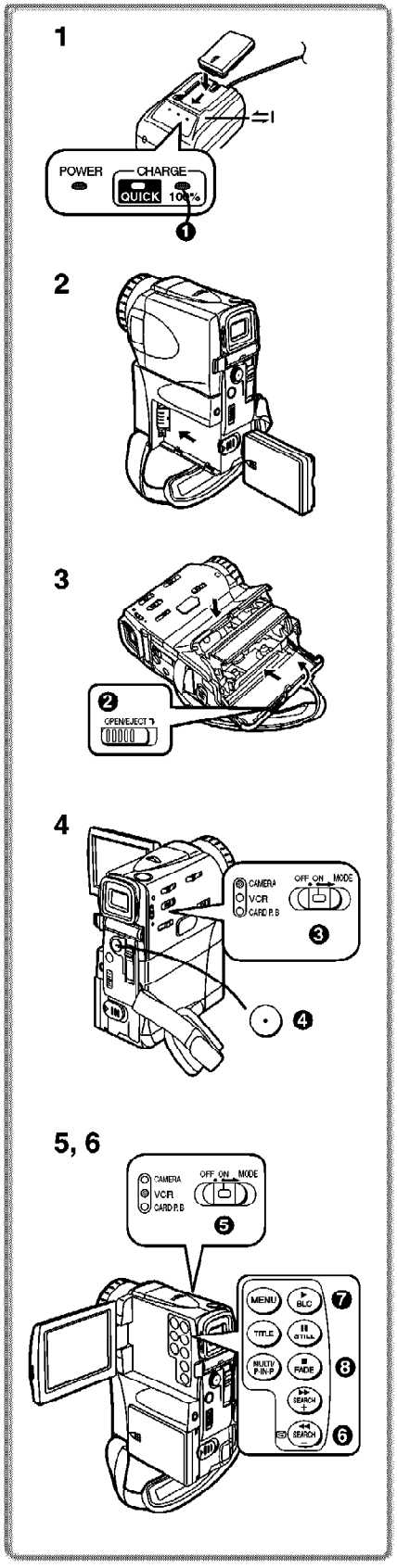
7 OPERATING GUIDE



Standard Accessories

Illustrated on the left are accessories supplied with the Movie Camera.

1) **AC Adaptor, DC Input Lead and AC Mains Lead**
2) **Battery Pack**
3) **Battery Adaptor Unit**
4) **Remote Controller and Button-Type Battery**
5) **Lens Cap**
6) **Lens Hood for MEGA Still Picture Recording**
   - By attaching supplied Lens Hood for MEGA Still Picture Recording that blocks direct sunlight in Mega-Pixel Recording, you can get better image. However, Lens Cap cannot be attached.
7) **AV Cable**
8) **SD Memory Card**
9) **USB Connection Kit**
10) **HEAD CLEANING CASSETTE**



Getting Started

1 Charge the Battery.

- Attach the Battery to the AC Adaptor.
- Connect the AC Mains Lead. (Charging starts.)
- After the [POWER] Lamp has lighted up, the [CHARGE] Lamp flashes. When the [100%] Lamp ❶ on the AC Adaptor is lit, charging is finished.

2 Attach the Charged Battery to the Movie Camera.

3 Insert the Cassette.

- Slide the ❷ Lever to open.
- Insert the Cassette.
- Close the Cassette Compartment Covers.

4 Turn the Movie Camera on and start recording.

- Set the ❸ Switch to [ON]. (The [CAMERA] Lamp lights up.)
- Press the ❹ Button. (Recording starts.)
- Press the ❹ Button again to pause the recording.

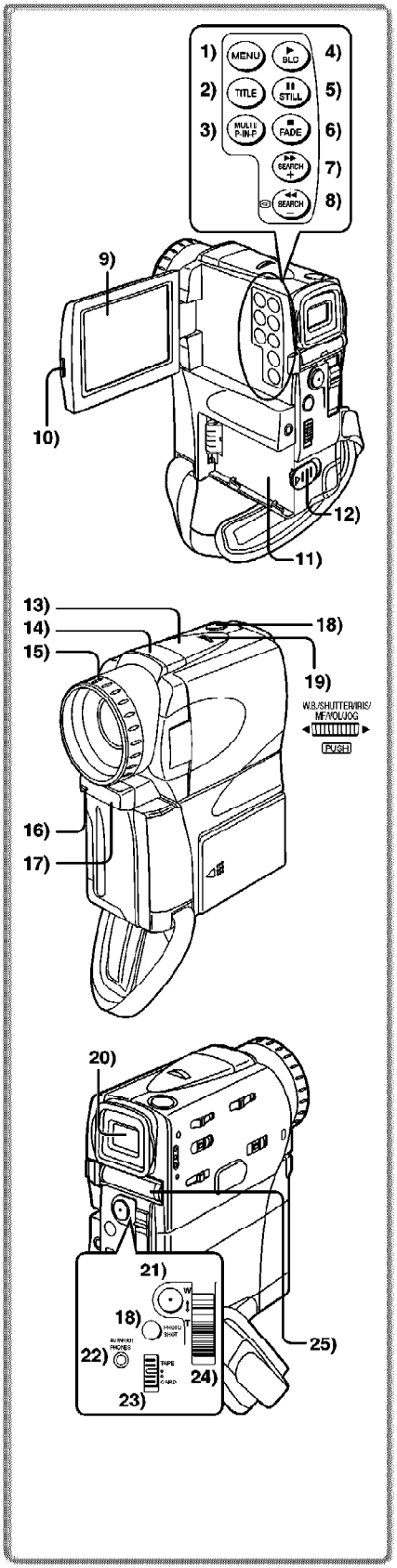
Viewing What Has Been Recorded

5 Switch to the VCR Mode, rewind the tape, and play the tape back.

- Slide the ❺ Switch. (The [VCR] Lamp lights up.)
- Press the ❻ Button. (Rewind the tape.)
- Press the ❼ Button. (Playback starts.)
- Press the ❽ Button. (Playback stops.)

6 Turn the Movie Camera off.

- Set the ❺ Switch to [OFF].



Controls and Components

Movie Camera (DV Camera Style)

1) **Menu Button [MENU]**
2) **Title Button [TITLE]**
3) **Multi-Picture Button [MULTI]**
   Picture-in-Picture Button [P-IN-P]
4) **Backlight Button [BLC]**
   Play Button [▶]
5) **Still Button [STILL]**
   Pause Button [❚❚]
6) **Fade Button [FADE]**
   Stop Button [■]
7) **Forward Search Button [SEARCH +]**
   Fast Forward/Cue Button [▶▶]
8) **Reverse Search Button [- SEARCH]**
   Rewind/Review Button [◀◀]
   Recording Check Button [⧉]
9) **LCD Monitor**

•Due to limitations in LCD production technology, there may be some tiny bright or dark spots on the LCD Monitor screen. However, this is not a malfunction and does not affect the recorded picture.

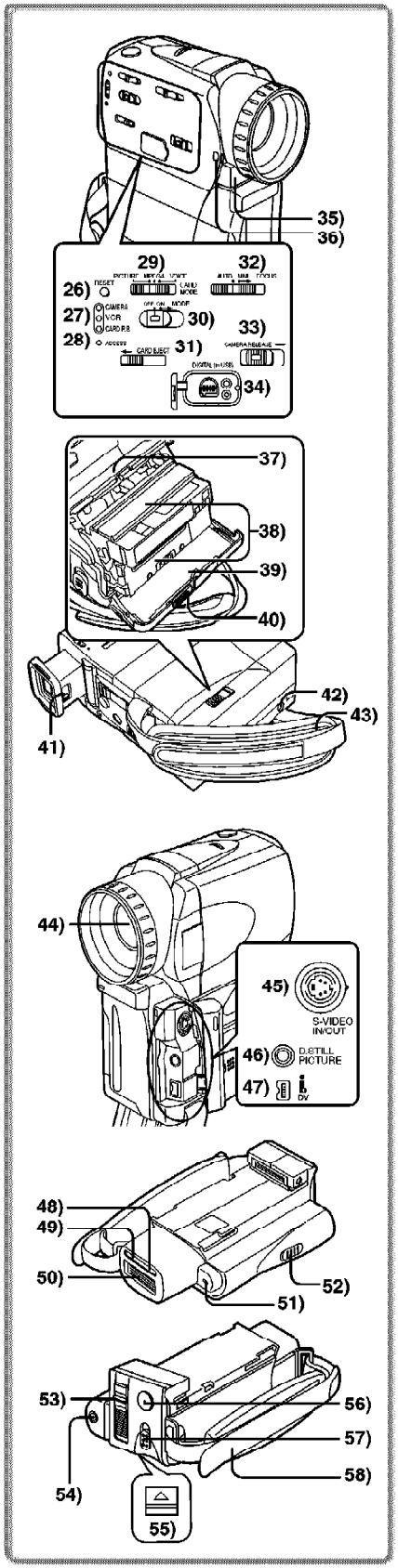
---

10) **LCD Monitor Open Button [PUSH OPEN]**
11) **Battery Holder**
12) **Battery Eject Lever [BATTERY EJECT]**
13) **Speaker**
14) **Microphone (built-in, stereo)**
15) **Lens Hood**
16) **Recording Lamp**
17) **Remote Control Sensor**
18) **Photoshot Button [PHOTO SHOT]**
19) **Multi-Function Dial [PUSH]**
20) **Viewfinder**

•Due to limitations in LCD production technology, there may be some tiny bright or dark spots on the Viewfinder screen. However, this is not a malfunction and does not affect the recorded picture.

---

21) **Recording Start/Stop Button**
22) **Audio-Video Input/Output Socket [AV IN/OUT]**
    Headphone Socket [PHONES]
    •Connecting an AV Cable to this socket activates the Movie Camera's built-in speaker, but connecting a headphone, etc. deactivates it.
23) **Tape/Card Selector [TAPE/CARD]**
24) **Zoom Lever [W/T]**
25) **Card Slot**



26) Reset Button [RESET]
27) Operation Mode Lamps
28) Card Access Lamp [ACCESS]
29) Card Mode Selector Switch [PICTURE/MPEG4/VOICE]
30) Movie Camera Off/On Switch [OFF/ON/MODE]
31) Card Eject Lever [CARD EJECT]
32) Mode Selector Switch [AUTO/MNL/FOCUS]
33) Camera Release Lever [CAMERA RELEASE]
34) USB Socket [DIGITAL (to USB)]
35) White Balance Sensor
36) Lens Cap Installation Hole
37) Upper Cassette Compartment Cover
38) Cassette Holder
39) Lower Cassette Compartment Cover
40) Cassette Eject Lever [OPEN/EJECT]
41) Eyepiece Corrector Knob
42) Tripod Receptacle
- Used for mounting the Movie Camera on an optional tripod.

43) Grip Belt
44) Lens (LEICA DICOMAR)
45) S-Video Input/Output Socket [S-VIDEO IN/OUT]
46) Digital Still Picture Terminal [D.STILL PICTURE]
47) DV Terminal (i.LINK) [i]
- Connect this to the digital video equipment.
- "i.LINK" is the name of connectors in accordance with IEEE1394-1995. "i" is a logo marked on products comforming with the "i.LINK" specifications.

Battery Adaptor Unit

48) Sensor
49) Recording Lamp
- This Lamp indicates that it's in use when recording Moving Picture (MPEG4) or recording Voice.

50) Video Flash
51) Microphone (built-in, Monaural)
52) Audio-Video Output/Phones Selector Switch [AV OUT/PHONES]
- Set this switch to [AV OUT] when watching on a TV or dubbing to [PHONE] when using headphones.
- If this switch is not set to [PHONES], you may hear some noise.
- If an AV Cable is connected while [AV OUT] is selected, LCD display will disappear.

53) Zoom Lever [W/T]
- This functions in the same manner as the 24) of the DV Camera Style.

54) Audio-Video Output/Phones Socket [AV OUT/PHONES]
55) Battery Eject Lever
- It is located behind the battery.

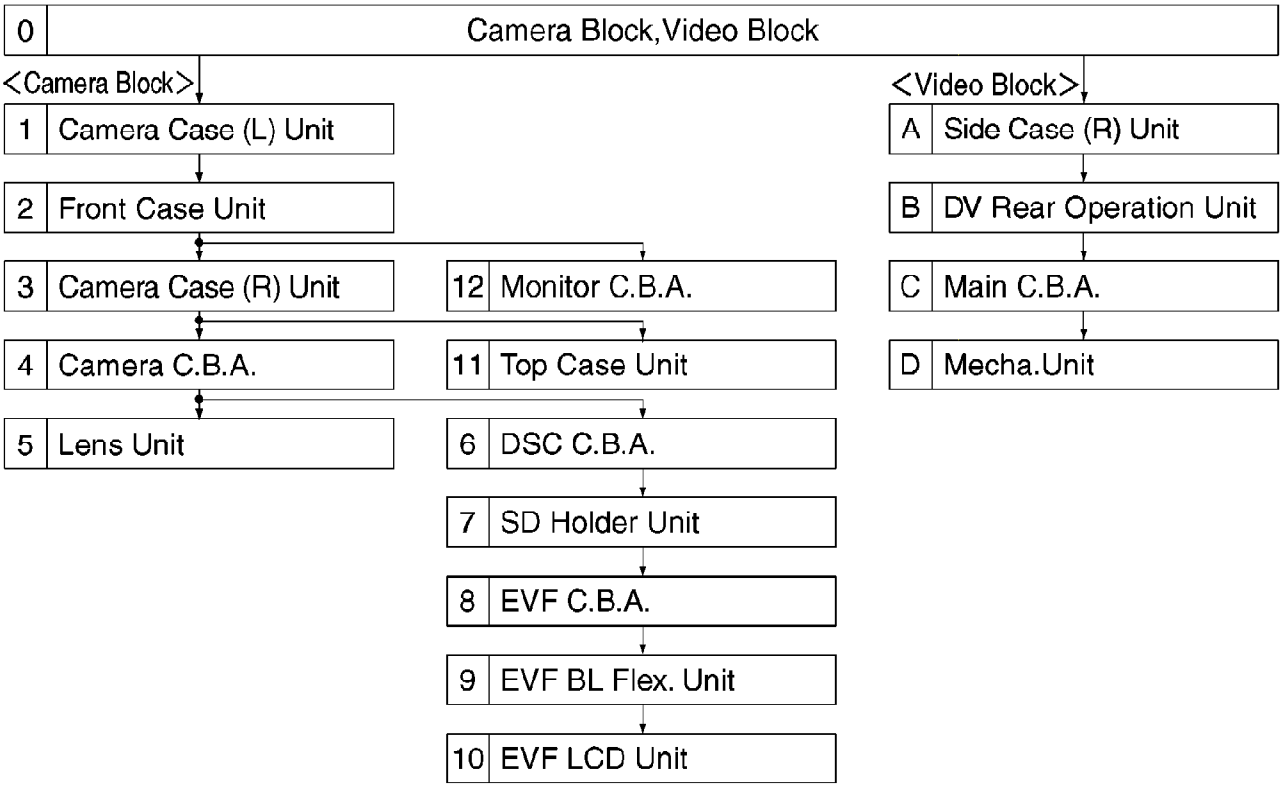
56) Recording Start/Stop Button
- This Button is to record Moving Picture (MPEG4) and Voice.

57) Battery Open Lever [OPEN]
58) Grip Belt
- This functions in the same manner as the 43) of the DV Camera Style.

8 ADJUSTMENT PROCEDURES

8.1. DISASSEMBLE FLOW CHART

This flow chart indicates the disassembly steps the cabinet parts, C.B.A. and Mecha. Unit in order to access to be serviced. When reinstalling, perform the steps in the reverse order.



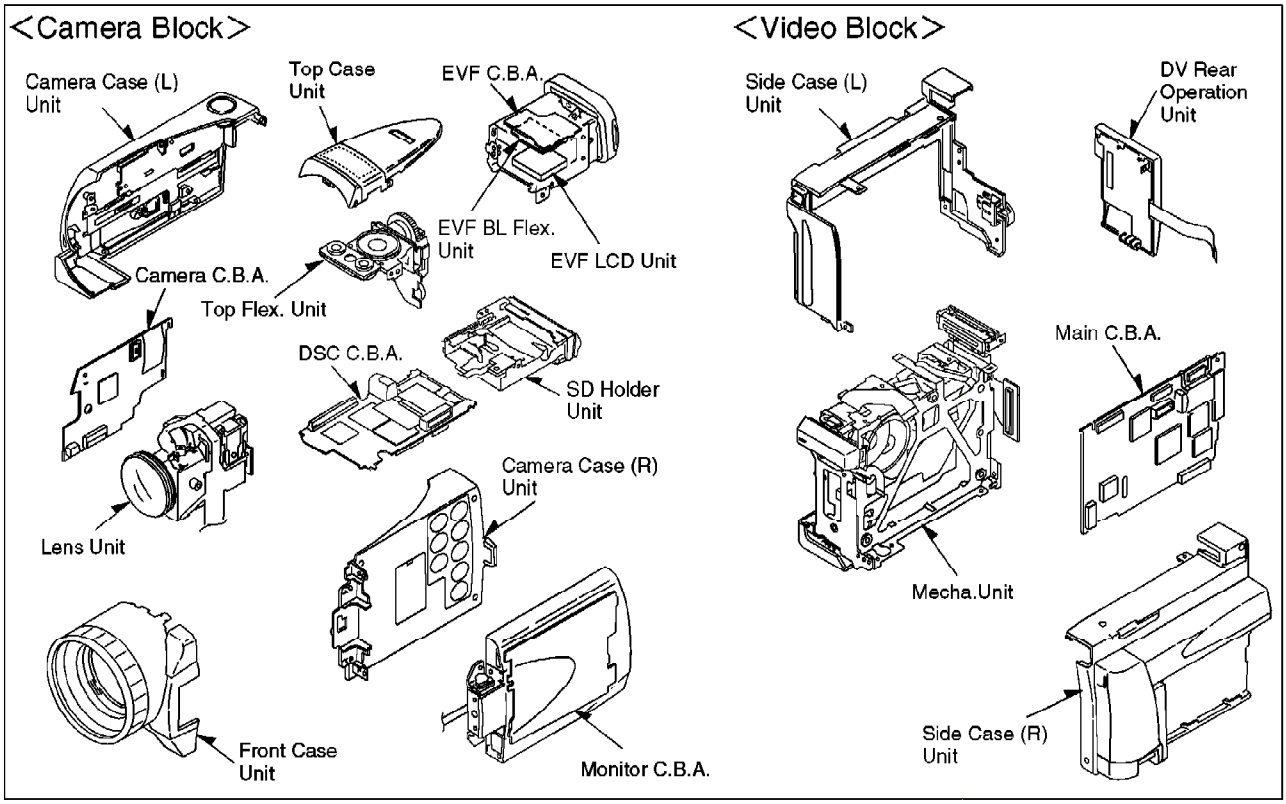


Fig. F1

8.2. DISASSEMBLY PROCEDURES

Flow-Chart for Disassembly Procedure

No.	Item/Part	Fig.	Removal (Screw & Other)
0	Camera Block & Video Block	Fig. D2	Turn power off Keep Sliding switch and slide Camera Block to sepalate Camera and Video block
Camera Block			
1	Camera Case (L) Unit	Fig. D3	6-Screws (A) Open direction (1) Pull direction (2) Slide the Guide Frame Unit to direction (3) Remove the Guide Frame Unit
		Fig. D4	1-Screw (B) 1-Screw (C) 1-Connector FP6505 Remove the Camera Case (L) Unit
2	Front Case Unit	Fig. D5	2-Screws (D) Remove the Front Case Unit
3	Camera Case (R) Unit	Fig. D6	1-Screw (E)
		Fig. D7	1-Screw (F) 4-Connectors FP601/FP602/FP6506/FP6507 Remove the Camera Case (R) Unit
4	Camera C.B.A.	Fig. D8	1-Connector PP301 2-Tabs Remove the Camera C.B.A./Lens Unit
		Fig. D9	1-Screw (H) 3-Connectors PS201/FP701/P6501 Remove the Camera C.B.A.
5	Lens Unit	Fig. D9	1-Screw (G) Remove the Lens Frame (L) Unit
		Fig. D10	2-Screws (I) Remove the Lens Frame (R) Unit Remove the CCD Radiation Rubber Remove the Lens Unit
6	DSC C.B.A.	Fig. D11	1-Screw (J) 1-Connector FP603 Remove the DSC Multi Unit/DSC C.B.A. 1-Connector PS3403 2-Tabs Remove the DSC C.B.A.
7	SD Holder Unit	Fig. D12	2-Screws (K) 1-Connector FP801 Remove the SD Holder Unit
8	EVF C.B.A.	Fig. D13	Slide the Eye Cap Unit 2-Screws (L) Remove the Eye Cap Unit
		Fig. D14	1-Connector FP802 Unsolder 1 Portion 3-Tabs Remove the EVF C.B.A.
9	EVF BL Flex. Unit	Fig. D15	2-Screws (M) Remove the EVF Guide Frame Slide the EVF Slide Holder Slide the EVF Guide Holder
		Fig. D16	Slide the EVF Click Spring 4-Tabs Remove the EVF BL Flex. Unit
10	EVF LCD Unit	Fig. D17	4-Tabs Remove the BL Fixing Plate Remove the EVF LCD Unit
11	Top Case Unit	Fig. D18	1-Screw (N) Remove the Top Case Unit
12	Monitor C.B.A.	Fig. D19	2-Screws (O) 1-Screw (P) 7-Tabs Remove the LCD Case (Upper) Unit 1-Screw (P) 4-Connectors FP901/FP903/FP904/FP905 Remove the Monitor C.B.A.

No.	Item/Part	Fig.	Removal (Screw & Other)
Video Block			
A	Side Case (R) Unit	Fig. D20	3-Screws (Q) 1-Screw (R)
		Fig. D21	1-Screw (S) 1-Screw (T) 3-Screws (U) 2-Connectors FP1001/FP6502 Remove the Side Case (R) Unit
B	DV Rear Operation Unit	Fig. D22	1-Connector FP6503 Remove the DV Rear Operation Unit
C	Main C.B.A.	Fig. D23	Cassette Cover Open
		Fig. D24	2-Screws (V) 2-Connectors FP6504/PS3402 4-Tabs Remove the Main C.B.A./Mecha. Unit
		Fig. D25	1-Screw (W) 5-Connectors FP2201/FP2202/FP2203/FP2204/FP5001 Remove the Main C.B.A.
D	Mecha. Unit	Fig. D25	3-Screws (X) Remove the Mecha. Unit

If the card is inserted, take out it before disassembling

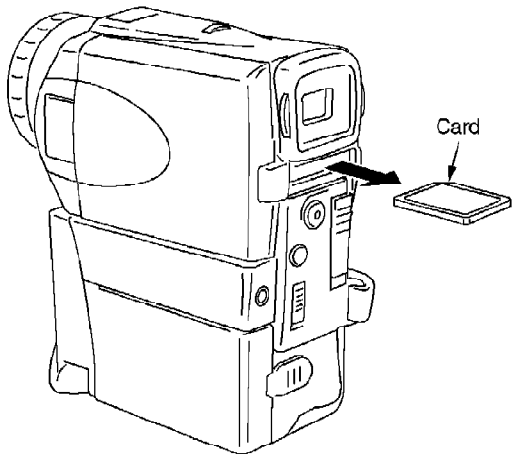


Fig. D1

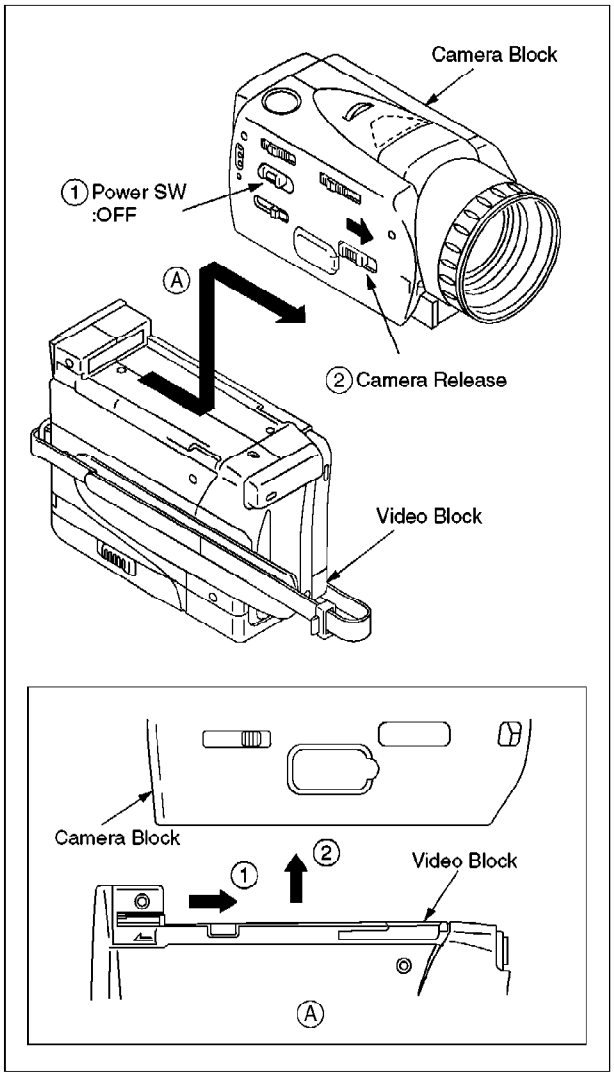


Fig. D2

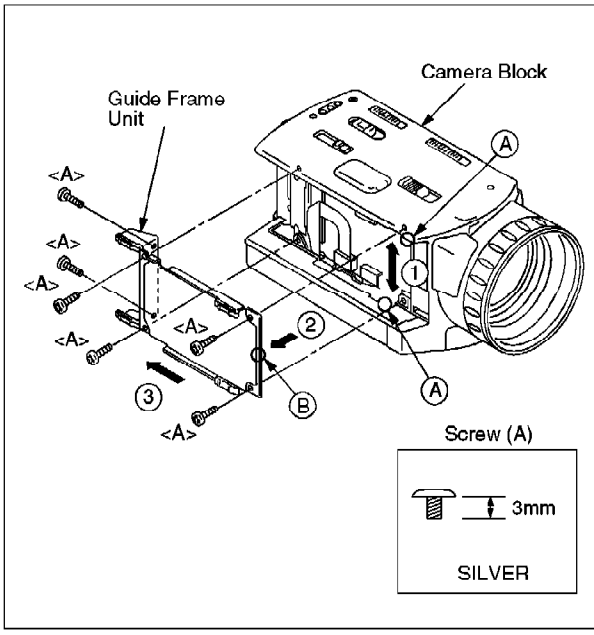


Fig. D3

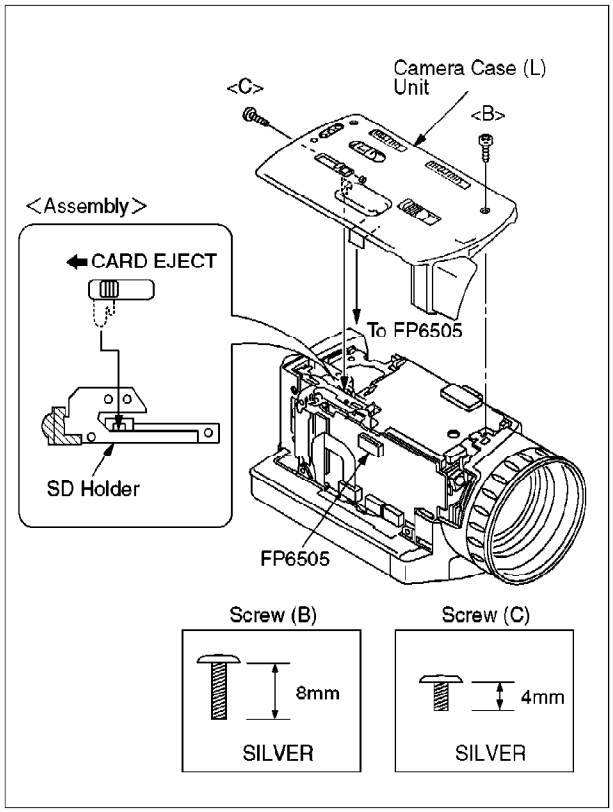


Fig. D4

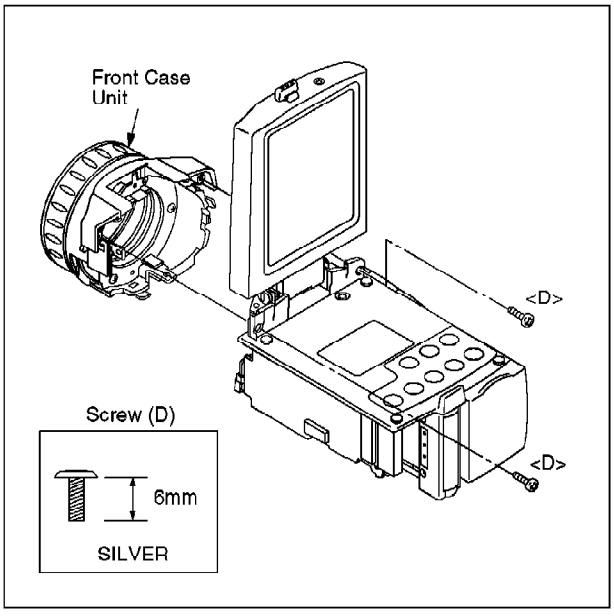


Fig. D5

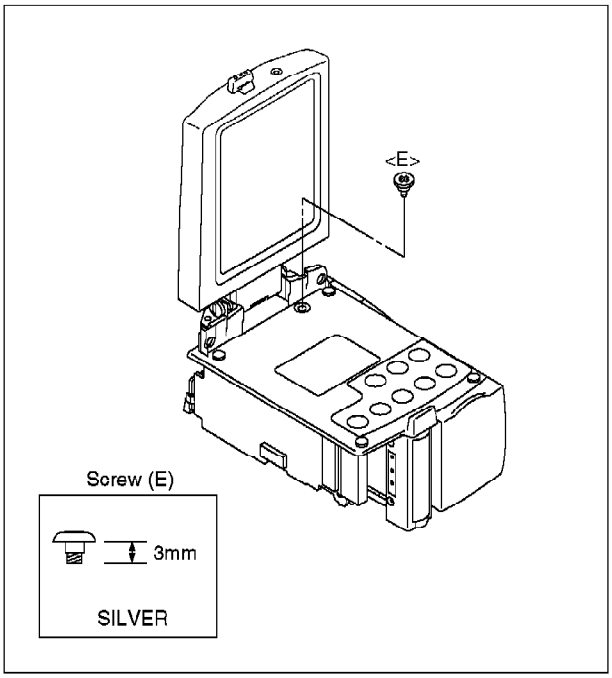


Fig. D6

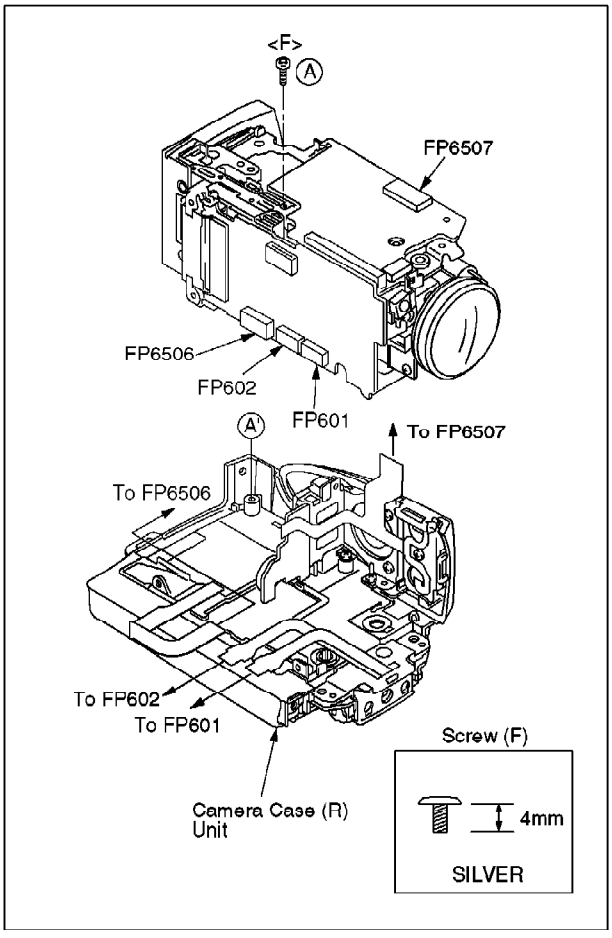


Fig. D7

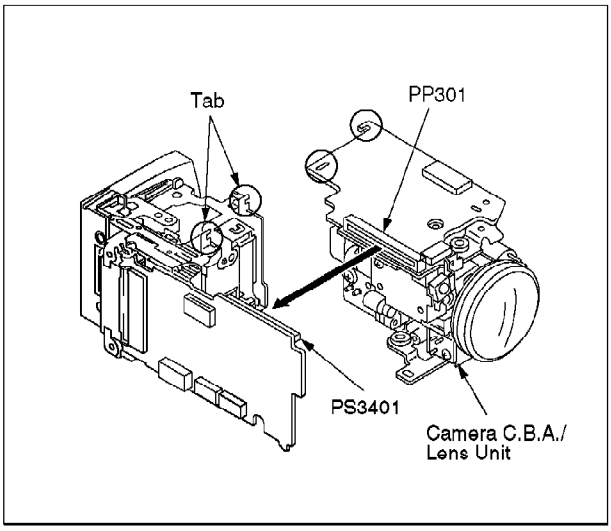


Fig. D8

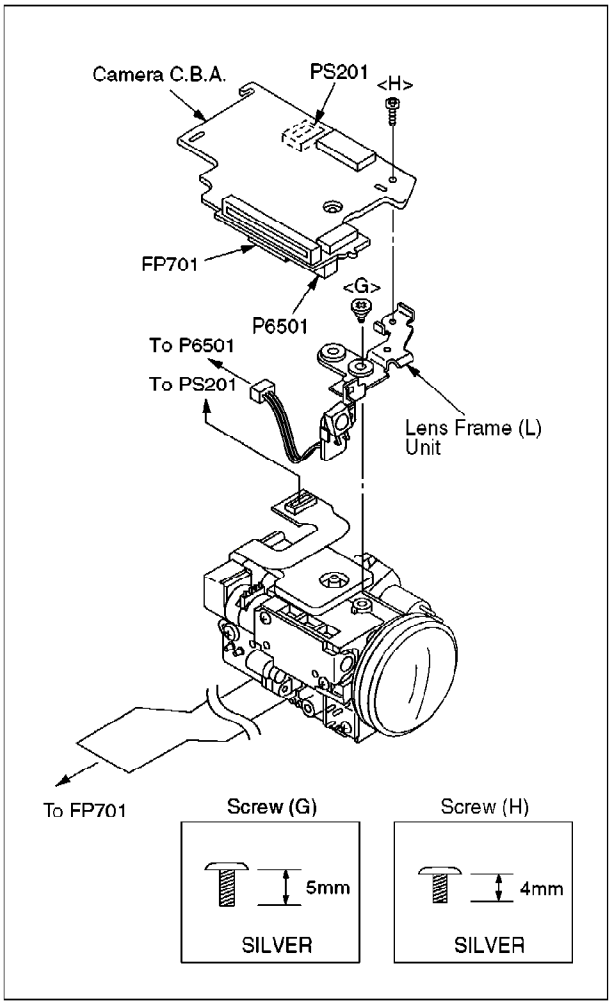


Fig. D9

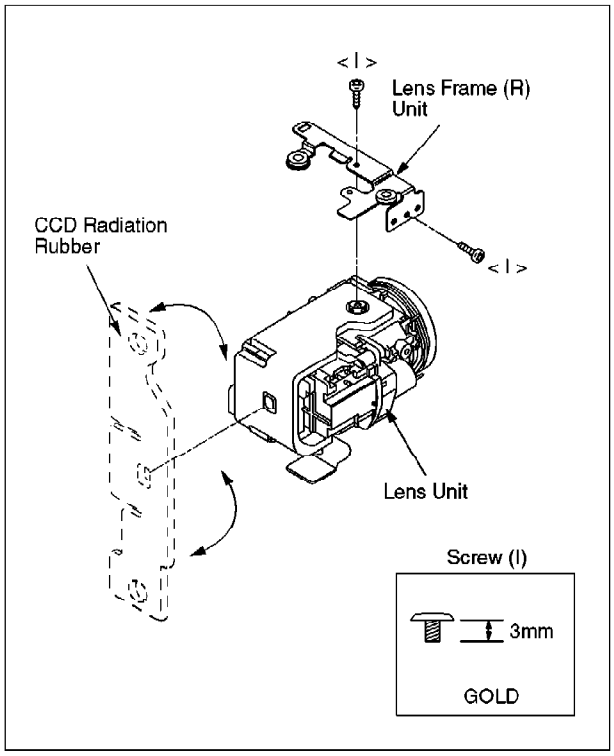


Fig. D10

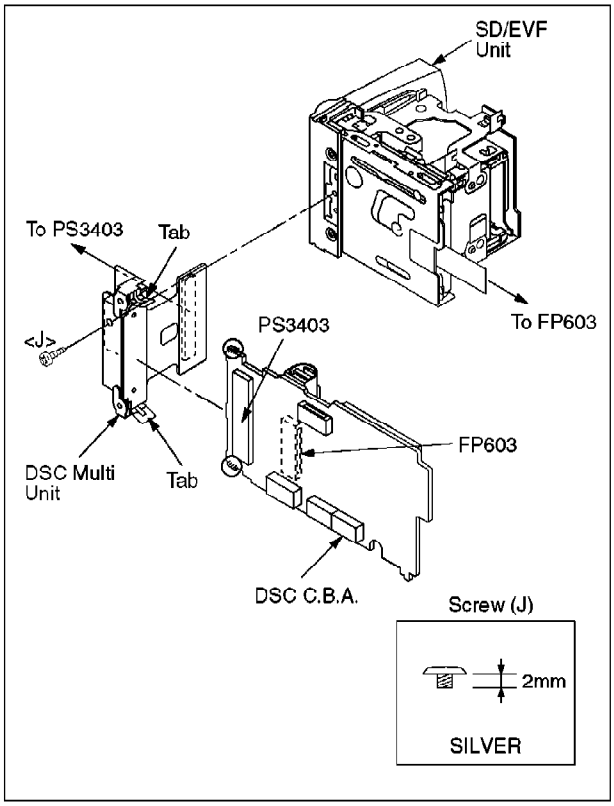


Fig. D11

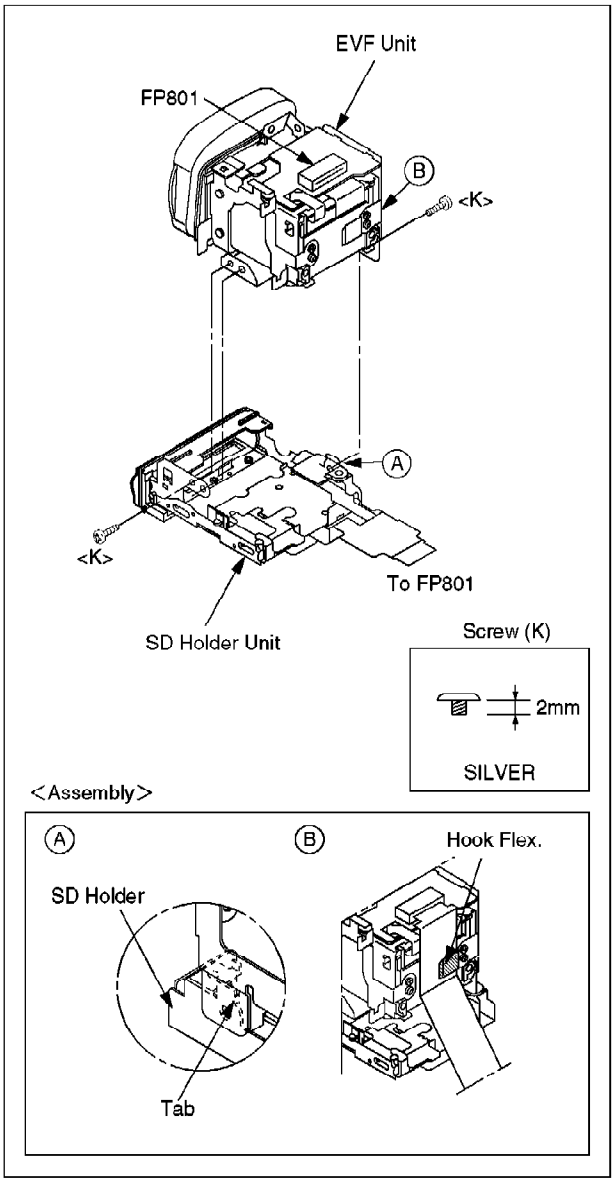


Fig. D12

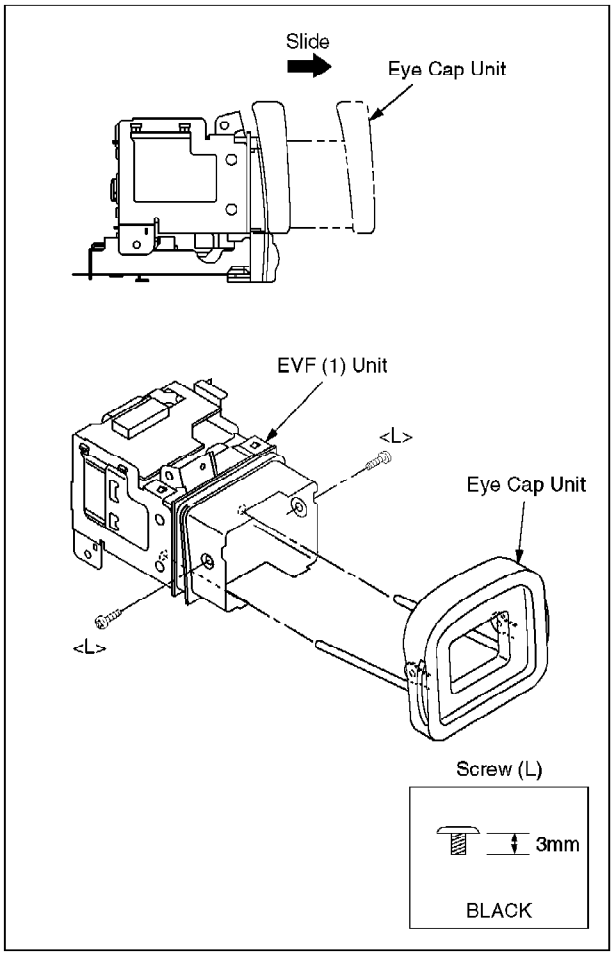


Fig. D13

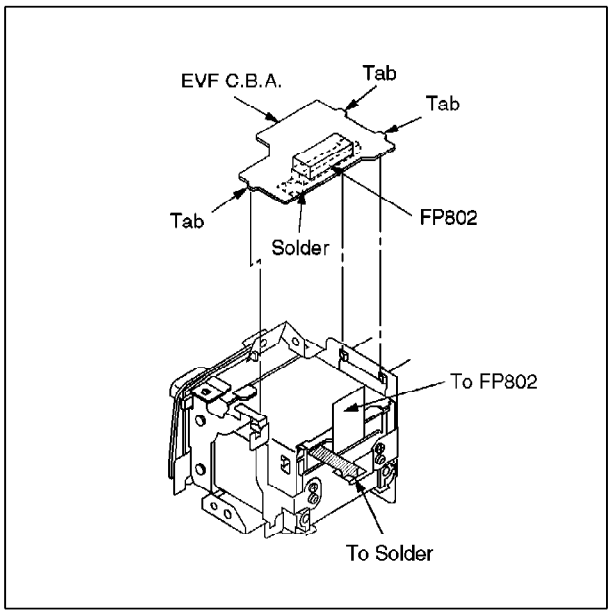


Fig. D14

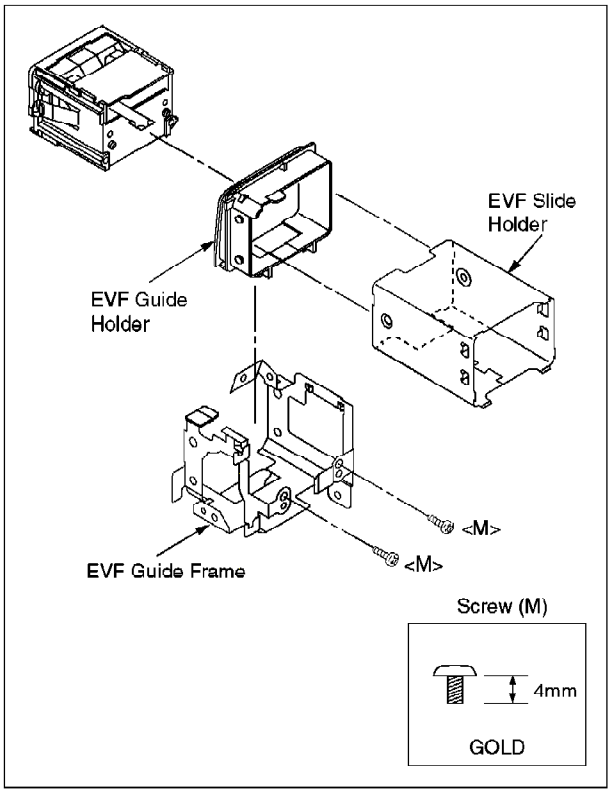


Fig. D15

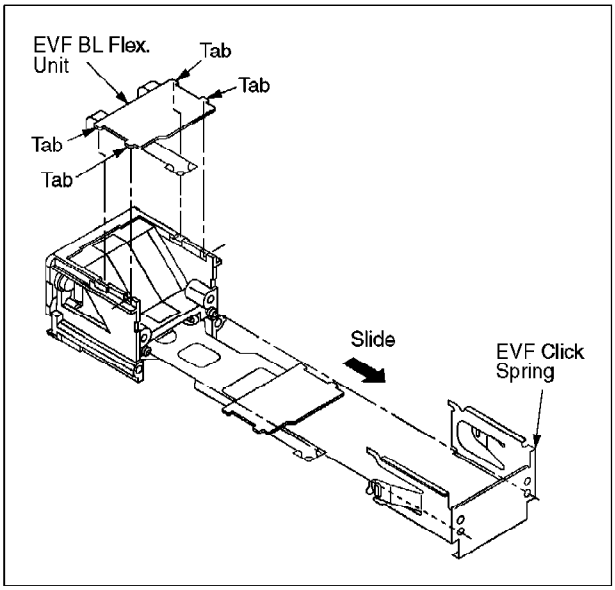


Fig. D16

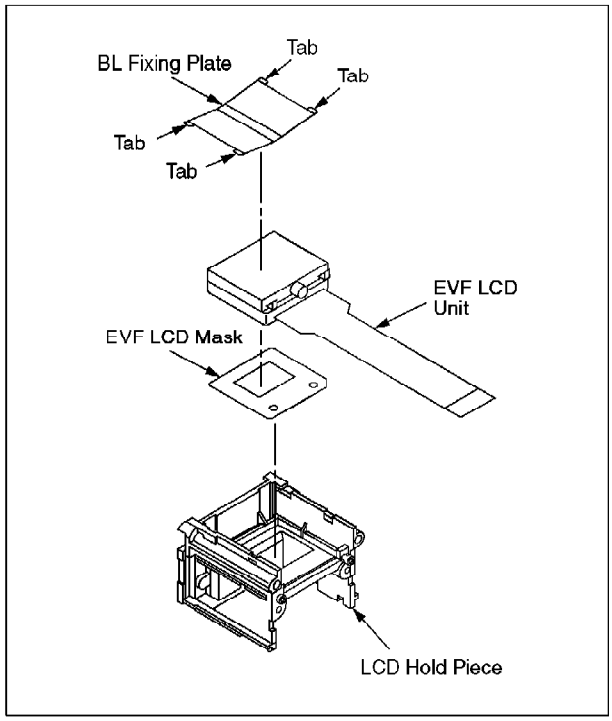


Fig. D17

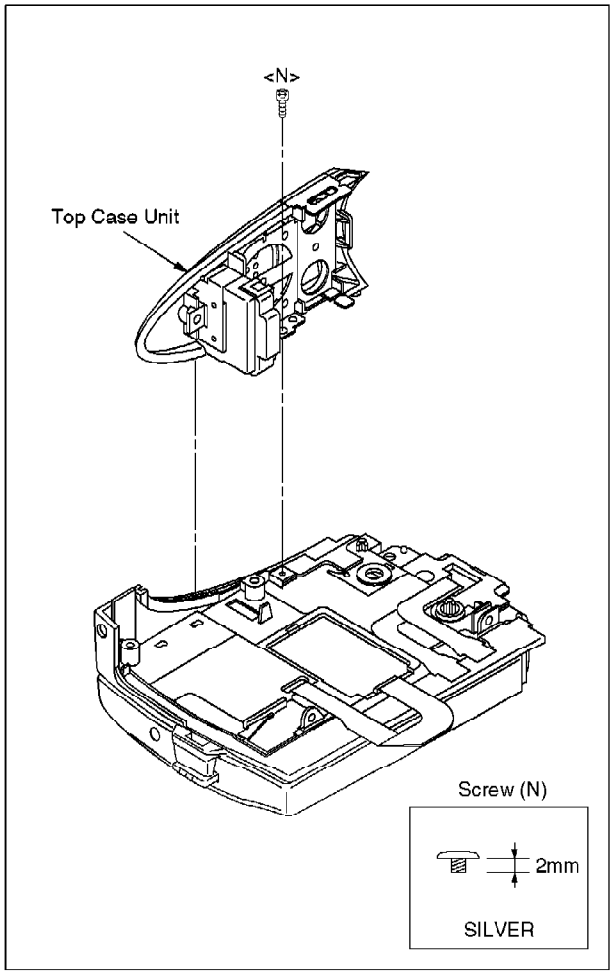


Fig. D18

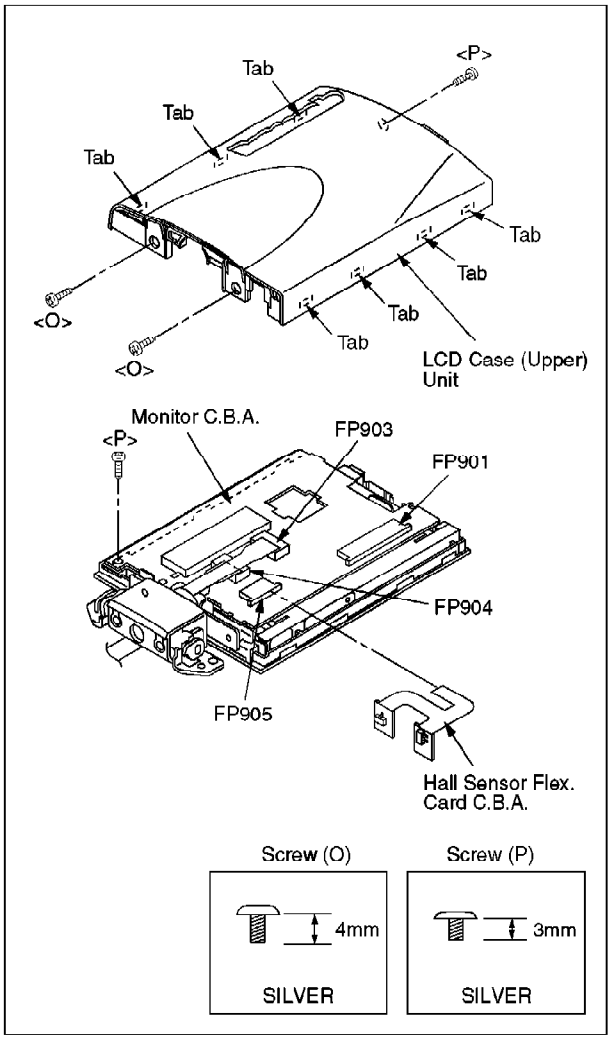


Fig. D19

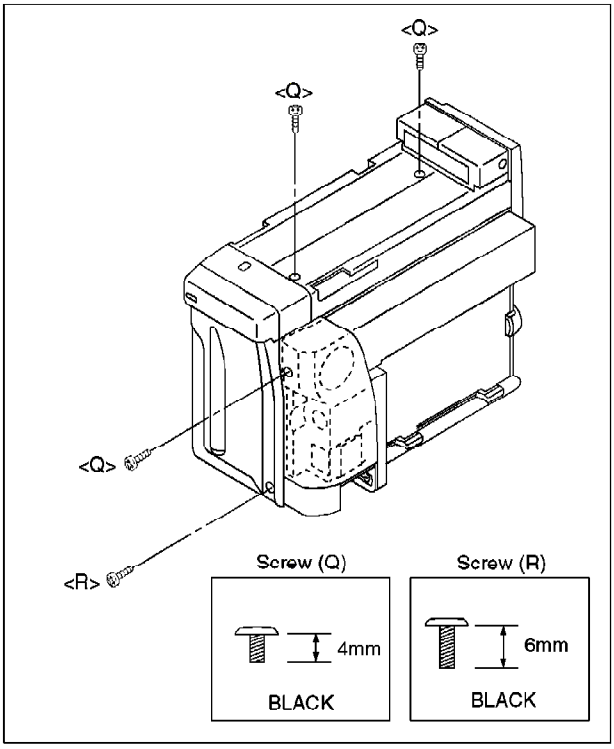


Fig. D20

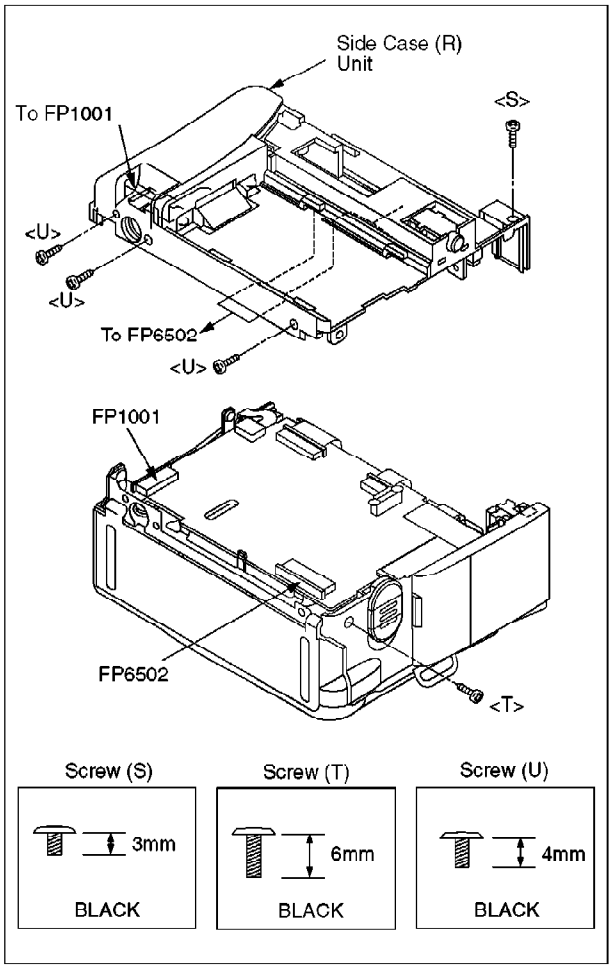


Fig. D21

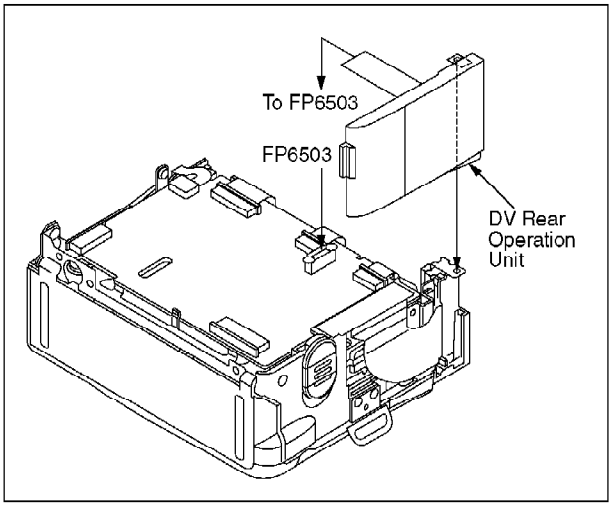


Fig. D22

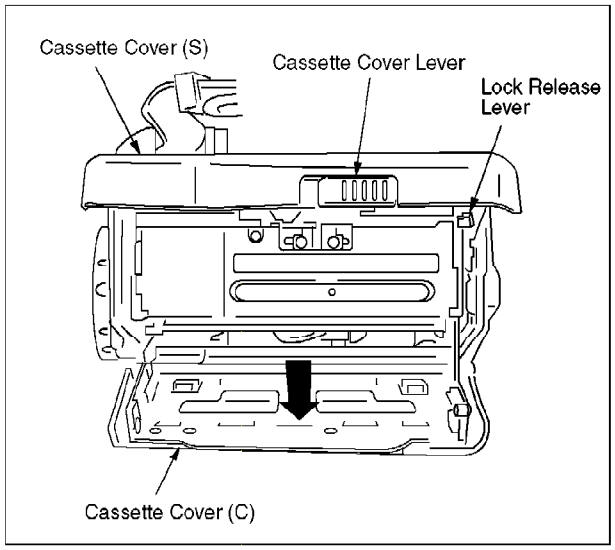


Fig. D23

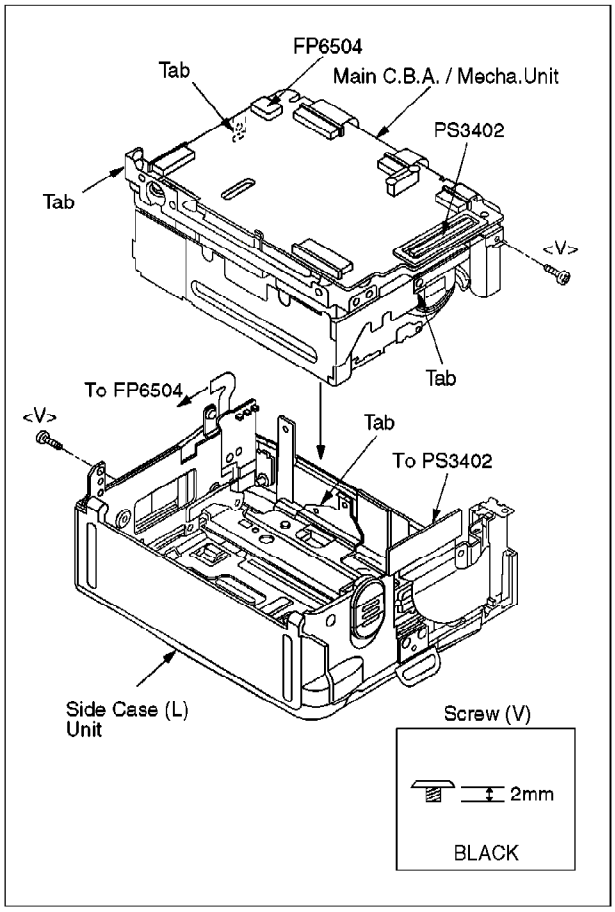


Fig. D24

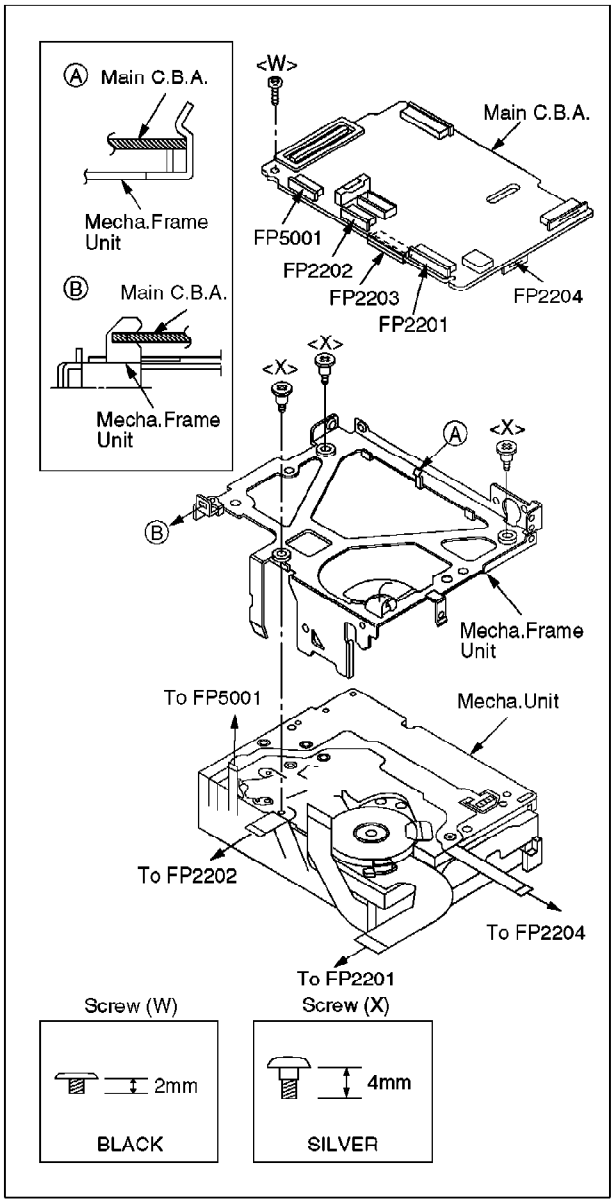

Ⓐ Main C.B.A.
Mecha.Frame Unit
Ⓑ Main C.B.A.
Mecha.Frame Unit
<W>
Main C.B.A.
FP5001
FP2202
FP2203
FP2201
FP2204
<X>
<X>
<X>
Ⓐ
Ⓑ
Mecha.Frame Unit
To FP5001
Mecha.Unit
To FP2202
To FP2204
To FP2201
Screw (W)
2mm
BLACK
Screw (X)
4mm
SILVER

Fig. D25

8.3. DISASSEMBLY PROCEDURES OF CAMERA LENS UNIT

The following flowchart describes order or steps for removing the Camera lens unit and certain printed circuit boards in order to make access to the item needing service.
To reassemble the unit follow the steps in reverse order.

1. CCD Unit	Ref.-No.302
2. CCD Cushion & Crystal Filter	Ref.-No.305/301
3. Lens Flex. Unit & Zoom Motor	Ref.-No.310/320
4. Master Flange & Iris Unit	Ref.-No.319/308
5. 3rd Moving Frame Unit	Ref.-No.318
6. 4th Moving Frame Unit	Ref.-No.315
7. 2nd Moving Frame Unit	Ref.-No.316
8. Guide Pole	Ref.-No.312/313

Note 1:
Each Ref-numbers are equivalent to number of Fig.L1 and Parts List.

Fig. L1

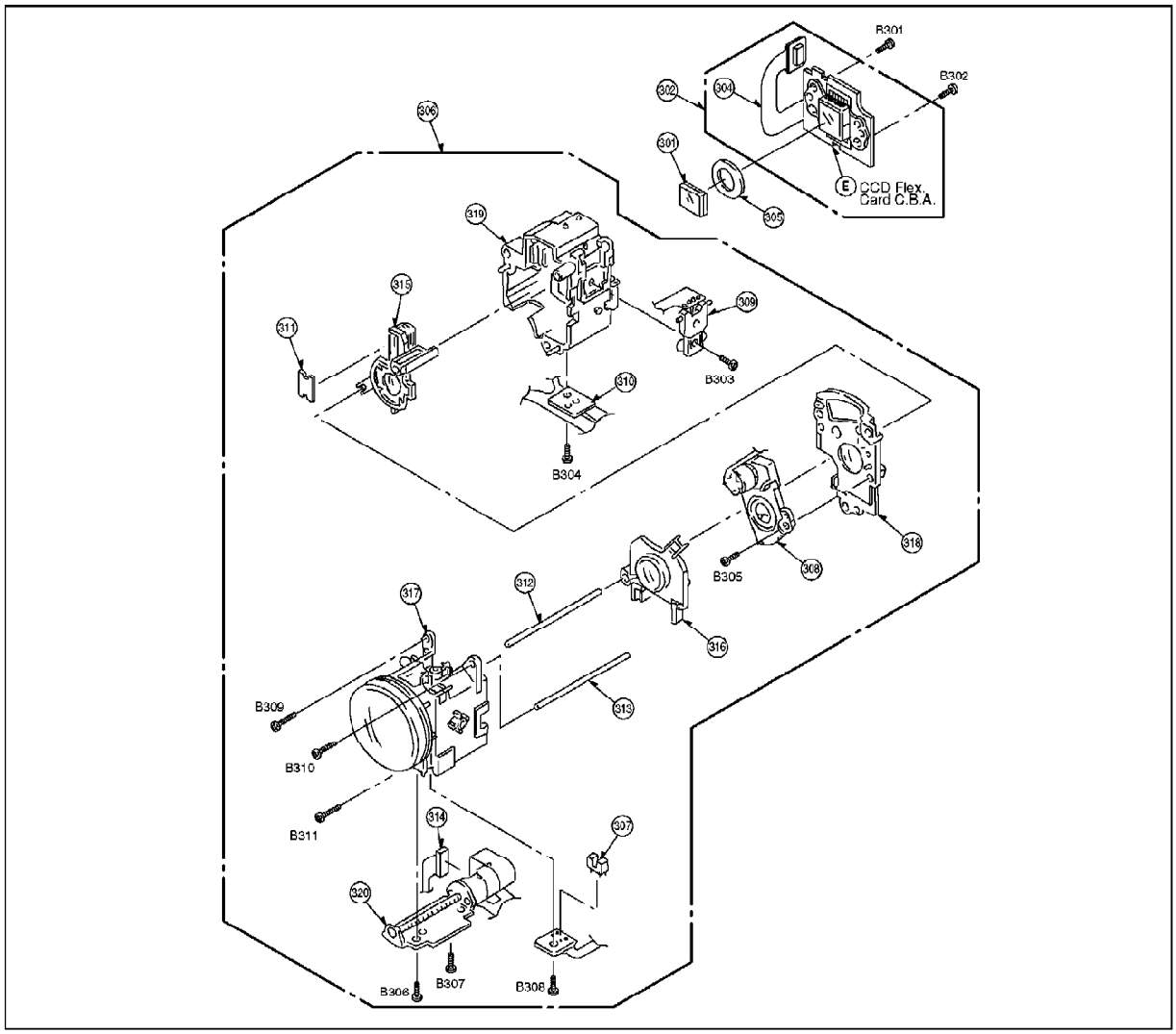


Fig. L2

9 ABBREVIATIONS

INITIAL/LOGO		ABBREVIATIONS
A	A GND	Analogue GND
	A HASW	Audio Head Amp Switching Pulse
	A HSW	Audio Switching Pulse
	A MUTE	Audio Mute
	A ORP	Audio Overlap Pulse
	A. TR	Auto Tracking
	A0-8, 0-17	Memory Address
	A3V2	AD Converter Reference Voltage
	AB0-4	Address Bus
	AB0-4, AB12-15	Address Bus Line 0-4, 12-15
	ABSF	Focus Encoder Input
	ACI	Analogue Channel Cording IC
	AD	AD Converter
	AD	Auto Date, Analogue Digital Converter
	AD CLK	AD Clock
	AD REC	Audio Delayed REC
	AD0-6	Address
	AD0-6, ADR0-6	Address Data Line
	ADCLK	Analogue Digital Converter Clock
	ADCNT	Analogue Digital Control
	ADCS	Analogue Digital Chip Select
	A-DET	Audio Detect
	ADREC	Audio Delaled Rec
	ADUB	Audio Dubbing
	AE	Auto Expose
	AECNT	Auto Expose Control
	AEE(H)	Audio E-E (H)
	AEH	Audio Erase Head
	AEIRQ	Auto Expose Interrupt Request
	AF/MF	Auto Focus/Manual Focus
	AF DIS CS	AF DIS Chip Select
	A-FADE(L)	Audio Fade (L)
	AF-AMP	AF HALL Bias
	AFCS	Auto Focus Chip Select
	AFRP	Audio PLL Voltage Control
	AF-VN	Zoom Encoder V-Ref (–)
	AF-VP	Zoom Encoder VREF (+)
	AGC	Automatic Gain Control
	AGCCNT	Automatic Gain Control Control
	AGND	Analogue Ground/Audio Ground
	AGS	Anti Ground Shooting
	AH(P) / (R)	Audio Head (Play) / (Record)
	AHASW	Audio Head Amp Switch Pulse
	AHSW	Audio Head Switch Pulse
	AI, AO	Buffer Input, Output
	AIBCK	Bit Clock (to A/D Converter)
	AIDAT	Serial Data (to A/D Converter)
	AILRCK	L/R Clock (to A/D Converter)
	AIMCK	Master Clock (to A/D Converter)
	ALC CNT	Auto Level Control Control
	ALC MAIN	Auto Level Control Drive
	ALE	Address Latch Enable
	A-LOCK	Full Auto Switch
	A-MUT(H)	Audio Mute (H)
	ANLPTH	Analogue Loop Through High
	AORP	Audio Overlap Pulse
	APCNT	Aperture Control
	APS	Auto Power Save
	ART VH	Artifical Vertical Sync
	AT CNT	Automatic Tracking Gain Adjust
	ATF	Automatic Track Finding
	ATFCLK	41.85MHz Clock
	ATFG	Auto Track Gain
	ATL	Auto Lock Select
	ATN	Absolute Track Number
	ATR OFF(H)	Auto Tracking Off (H)
	ATV	Advanced TV
	AUDIO(N)	Audio (Normal)
	AUX	Auxiliary
	AVDD	Analogue VDD
	AVSS	Analogue Ground
	AWTB	Auto White Balance B-Y
	AWTR	Auto White Balance R-Y
B	BACK	Back-up
	BACK UP	Microcomputer Back-up
	BACK VDD	Back-up Power
	BATT	Battery
	BATT ALARM	Battery Alarm
	BATT REF	Reference Voltage for Battery
	BCB	B Carrier Balance
	BCBM(B-Y)	B-Y Carrier Balance
	BCBM(R-Y)	R-Y Carrier Balance
	BD0-7	REC/Play In/Out Buss
	BDCK	Standard Bus Data Clock (9MHz)
	BDEN	Standard Bus Data Enable
	BEND	Data Block End Request
	BF	Burst Flag Pulse
	BFA	Burst Flag Pulse for Encorder
	BFO/BFI	Burst Flug Input/Output
	BI, BO	Buffer Input, Output
	BL	Back Light
	BL ON	Back Light ON (L)
	BL4V	Back Light 4V
	BLC 0, 1	Back Light Y Control Out, In
	BLDI/O	Back Light Drive Input/Output
	BLK	Blanking Pulse
	BLKA	Blanking for Encorder
	BLKA	Blanking Pulse for Encorder
	BLKI/O	Blanking Pulse In/Out

	INITIAL/LOGO	ABBREVIATIONS
	BLKZ	Blanking Pulse for Zoom Encorder
	BM	Balance Modulator
	BQUIET	Bus Out Control Signal
	BUF IN/OUT	Buffer In/Out
	B-Y KB	B-Y Carrier Balance
	B-YO	B-Y Signal Out
C	C A In/Out	Pre-Aperture In/Out
	CAPSTP	Capstan Stop Flag
	C CNT	Colour Control
	C SYNC	Composite Sync Signal
	C/N	Carrier/Noise
	C0-7, C00-07	Chrominance Signal 0-7
	CAGAIN	Aperture Gain Control
	CAM	Camera
	CAM CLK	Camera Clock
	CAM RST	Camera Reset
	CAM SIOC	Camera Serial In/Out Contol
	CAM T	Camera Test
	CAM TL	Capstan Trque Limit
	CAP EC	Capstan Trque Control
	CAP P(H)	Capstan Power On (H)
	CAP R/F/S	Capstan Reverse (H)/Stop (M)/Forward (L)
	CAP SW	Capstan Power Control Switch
	CAPSTP H	Capstan Stop Flag (Stop High)
	CAPVM	Capstan Motor Current
	CAPVS	Capstan Motor Power Control Switch
	CAS	Compresion, Audio Process, Shuffling/Deshuffling
	CAS	Memory Address Strobe (Active Low)
	CASDOWN, DWN	Cassette Down (L)
	CB, CR	Chroma B, Chroma R
	CBLK	Composite Blanking Pulse
	CC	Channel Cording
	CCA	Curent Drive Control
	CCA	Current Control Amp
	CCD	Charge Coupled Devise
	CCW	Counterclockwise
	CD SP0-7	Digital Chroma
	CDS	Correlate Double Sampling Signal
	CDS1, 2	Sampling Pulse for CCD Output Signal
	CE	Chip Enable
	CE	Control Pulse Erase
	CEC	Capstan Error Code
	C-ERA(H)	Control Erase (H)
	CFEM	Chrominance Memory Signal
	CFM	Chrominance Field Memory
	CFM I-4	Chroma Field Memory Signal
	CG CLK	Character Generator Clock
	CG CLK DATA	Clock Generator Data
	CG DATA	Character Generator Data
	CGC	Chrominance Gain Control
	CGCS	Character Generator Chip Select
	CGO	Character Generator Serial Data
	CH	Charge

	INITIAL/LOGO	ABBREVIATIONS
	CH1	Channel 1 (Odd Field)
	CHR	Character
	CHR BACK	Character Back-up
	CHR MIX	Character Mix
	CI, CO	Buffer In/Out
	CI,CO	Buffer Input & Output
	CIF	Control Signal Forward Input
	CIF, CIR	Positive Control Pulse, Negative Control Pulse
	CIR	Control Signal Reverse Input
	CK	Clock
	CL/CLK	Clock
	CLASS	Classeffication Signal for Compress (DCT/VLC)
	CLASS 0.1	Class Control Signal Durring DCT/VLC
	CLK135	13.5MHz System Clock
	CLK18	18MHz System Clock
	CLK2	Clock 2 (824XFH: 12.875MHz)
	CLK246	24.576MHz Clock
	CLK27	27MHz System Clock
	CLK450	450KHz Clock
	CLKDCLK	Digital Clock
	CLK-PH	Clock Phase Control
	CLK-REF	Reference Clock
	CLP-RST-H	Clamp Reset High Signal
	CLX	TFT X-axis Transmission Clock
	CLX, CLX1-4	Shift Clock for X Direction (LCD Panel)
	CLY	Shift Clock for Y Direction (LCD Panel)
	CLY	TFT Y-axis Transmission Clock
	CLY FG	Cylinder FG Signal
	CMEMO0-3	Chroma Memory Output Signal 0-3
	CMIX	Character Mix
	CMO	Chrominance Memory Output
	COMPC	Position Detection Pulse
	COM RDY	Serial Enable Signal
	CMODE	Camera Mode
	CNCLK	Clock
	CNR	Chrominance Noise Reduction
	CNT, CONT	Control
	CO	Control Out
	CO0-7	Chrominance Output 0 to 7 (Digital)
	COM	Common
	COM RDY	Serial Transmission Enable
	COMB	Comb Filter
	COS EQ	Cosin Equalizer
	CP	Clamp Pulse
	CP ON(H)	Camera Power On(H)
	CP2, 20	Clamp Pulse
	CP2A, CP2O	Encoder Clamp Pulse
	CPN	Component Signal
	CPOB	Clamp Pulse for Optical Blanking
	CPS	Composite Signal
	CPV	Gate Scan Clock
	CR OUT	Pre Apature Out
	CR POW SW	Camera Remote Power On Switch
	CRA	Aperture Gain Control

	INITIAL/LOGO	ABBREVIATIONS
	CRA	Pre Apature Gain Control
	CRST	Camera Reset
	CS	Chip Select
	CS 0-7	Chrominance Signal Out 0-7
	CSEL	Clock Phase Select
	CSI 0-7	Chrominance Signal In 0-7
	CTSW	Crosstalk Switch
	CURR	Current
	CW	Clockwise
	CYL EC	Cylinder Motor Trque Control
	CYL PG	Cylinder Motor PG
	CYL VM	Cylinder Motor Current or Power
D	D CLK	Digital Clock
	D MODE	Digital Mode Switch Signal
	D01-03	Zoom 01-03
	DA UV SEL	D/A Convertor U/V Select
	DAC	Digital Analogue Converter
	DAG	Digital Analogue Ground
	DB0-7	Data 0-7
	DB0-7	Microprocessor Data
	DCC	DC Clamp Control
	DCCNT	DC Control
	DCI	Digital Channel Cording IC
	DCLR	Digital Clear
	DCP	Digital Clamp Pulse
	DCS-CLK, DA	CAS & DV I/F Serial Clock
	DC-STP1	DCS Serial Start
	DC-STP2	DCS Serial Stop
	DCT	Discrete Cosine Transform (Compression)
	DCX7	Serial Data
	DEDP 0-3	Playback Data
	DEDR 0-3	Rec Data
	DEMO	Demodulation
	DEMP	A/D Convertor Empahsis Control
	DEMP	De-Emphasis
	DFD 0-7	Encode Data In/Out Between Shaffling Memory
	DFD0-7	Encode Input/Output Signal for Shuffling Memory
	DIBDCK	Bit Clock
	DICLK	Digital Clock
	DIDAT	Serial Data
	DIDAT	Serial Data Durring Digital Audio In
	DIF	Digital Interface
	DILRCK	L/R Clock
	DILRCK	Serial Clock Durring Digital Audio In
	DIMCK	Master Clock
	DIMCK	Mater Clock Durring Digital Audio In
	DIO 1-8	Data In/Out
	DIOS	Data In/Out Select Control Signal
	DIOS	Select Signal for Digital In/Out
	DIS	Digital Image Stabilizer
	DIS R/B	Digital Image Stabilizer Read (H)/Busy (L)
	DIS R/B	DIS IC Rady/Busy
	DIS/KAND	Digital Image Stabilizer/Sensitivity

	INITIAL/LOGO	ABBREVIATIONS
	DISCS	Dis Chip Select
	DISP	Display
	DL	Delay Line
	DOBCK	Audio A/D Convertor Bit Clock
	DOCTL	Data Output Control Signal
	DODAT	Serial Data (to D/A Converter)
	DOLRCK	Audio A/D Converter LR Clock
	DOLRCK	L/R Clock (to D/A Converter)
	DOMCK	Audio A/D Converter Master Clock
	DOMCK	Master Clock (to D/A Converter)
	DQ 1-16	Memory Data
	DRAM CAS	D-RAM Colum Address Strobe
	DRAM OE	D-RAM Out Enable
	DRAM RAS	D-RAM Read Address Strobe
	DREC	AV Delayed REC Start Pulse
	DRK	Dark (LPF Switch for Auto Focus)
	DS1, 2	Double Sampling Pulse
	DSF 0-7	Data In/Out for Shaffling Memory
	DSF 0-7	Input/Output Data to Shuffling Memory (18MHz)
	DSP	Digital Signal Processor
	DSP R/B	DSP IC Rady/Busy
	DSP-48K-H	DSP IC Clock Select
	DSTB	Data Stobe Signal
	DSV	Digital Sum Variation
	DV	Digital Video
	DVB	Digital Video Broadcast
	DVC	Digital Video Cassette
	DVDD	Digital VDD
	DVIO	Digital Video Input Output
	DVSS	Digital Ground
	DX	Shift Data for X Direction (for LCD)
	DY	Shift Data for Y Direction (for LCD)
	DY	TFT Y-axis Shift Data
	DZ	Digital Zoom
E	E Snap	Electric Snap Shot
	E ZM	Electric Zoom
	E2 CS or E2P CS	EEPROM Chip Select
	E2 R/B	EEPROM Rady/Busy
	E2P	EEPROM
	EARP	Earphone
	EC	Torque Control
	ECC	Error Correction Cording
	ECM	Electric Condencer Mic
	ECR	Reference Voltage for Capstan Torque
	EDA	Error Correction, DCI, ATF Servo
	EE CS	EEPROM Chip Select
	EE R/B	EEPROM Read (H)/Busy (L)
	EEPROM	Electric Erasable Programable Read Only Memory
	EIS	Electric Image Stabilizer (DIS)
	EMP	A/D Convertor Emphasis Control
	ENAB	Enable
	ENV	Enverope
	EOB	End of Block

	INITIAL/LOGO	ABBREVIATIONS
	EQ	Equalizer
	EVF	Electric View Finder
	EXT DC	External DC (AC Adaptor)
	EXT DC(H)	AC Adaptor DC (H)
	EXT NOREG	AC Adaptor 6V
	EXT S DATA	Serial Data for Edit
	EXT SCK	Serial Clock for Edit
	EZOOM	Electric Zoom
F		
	F ENC	Lens F-Value
	FACT MODE	Factry Mode (not used in the service)
	FB	Feed Back
	FC	Saw Tooth Signal In
	FCK	Clock
	FCO	Saw Tooth Signal Generator
	FENC	Focus Encoder
	FEND	Frame End Pulse
	FH2B	FH/2 (15.625KHz / 2=7.8125KHz)
	FIX OSD	Auto Tracking Off (H)
	FLICK	Flicker Output
	FM	Field Memory
	FM0-7	Field Memory 0-7
	FMCO0-3	Field Memory Chrominance Out 0-4
	FMDIR	Focus Motor Direction
	FMOEM	Field Memory Enable
	FMOEO	Field Memory Enable
	FMT1-4	Focus Motor Terminal 1-4
	FMY00-07	Field Memory Luminance Out 0-7
	FMYI0-07	Field Memory Luminance In 0-7
	FNO	F Value
	FPS	Frame Refference Signal
	FR	Capstan Reverse High
	FRP	Frame Refference Pulse
	FRPSO	Frame Start Pulse
G	G1, G2, G3	Gap 1, 2 and 3
	GCA	Gain Control AMP
	GCNT	Gain Control
	G-CNT	AGC Adjustment
	GCTRL	Gain Control
	GENE	Generator
	GF	FG AMP Terminal
	GSW	Ground for Switching Power
H	H/M/N	Hi-Fi / Mix / Normal
	H/N	Hi-Fi / Normal
	H1, 2	H. CCD Drive Pulse
	HAP	Horizontal Aperture
	HASW	Head AMP Switching Pulse
	HB	Hall Bias
	HBR SET	High Brightness Set
	HBRST	High Brightness Set
	HCLR	High Clear
	HCP	Shift Clock for Horizontal Drive

	INITIAL/LOGO	ABBREVIATIONS
	HD	Horizontal Drive Pulse
	HDTV	High Definition TV
	HEX	Hexadecimal
	HG	Hall Gain
	HID	Head Switching Pulse
	HLT	High Bright Signal
	HALL IN(+), (–)	Input Signal from Hall IC
	HP	Headphone
	HPF	High Pass Filter
	HSE	Modulated Data Output
	HSP	Timing Pulse for Shaffling Memory
	HSS	Horizontal Sync Signal
	HSW	Head Switching Pulse
	HS-WT	High Speed Zoom
	HSZ	High Speed Zoom
I	I/F	Interface
	I-2 C	Inter Integrated Circuit
	ID(H)	Wide Television (H)
	IMP	Inter Microprocessor Protocol
	INF	CCD Input Signal 1
	INF	Input Frame Signal
	INS	CCD Input SIgnal 2
	INTER	Interval Recording
	INV	Inverter
	IOU	R-Y Analogue Signal Output
	IOV	B-Y Analogue Signal Output
	IOY	Y Analogue Signal Output
	IR	Infrared Rays
	IRDET	Imfrared Ray Detection
	IREF	Current Adjustment Terminal
	IRIS/SH	Iris / Shutter Control
	IRQ	Interrupt Request
	ITI	Insert & Track Information
J	JPEG	Joint Photographic Image Cording Experts Group
K	KANDO	Digital Gain Up
	KB	Carrier Balance
	KEY IN	Key Scan
	KND	Digital Gain Up
	KNEE	Luminance Compensate
L	LCD	Liquid Crystal Display
	LCD P(L)	LCD Power On (L)
	LD	Load Pulse
	LDD	Liquid Direct Drive
	LEDCNT	LED Control
	LI-BATT	Lithium Battery
	LOAD	Loading
	LOAD F, R	Loading Direction (F: Forward / R: Reverse)
	LPF	Low Pass Filter
	LRMONO	Monoral Audio (L + R)
	LSB	Least Significant Bit

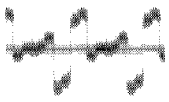
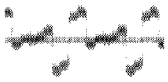
INITIAL/LOGO		ABBREVIATIONS
	LVL	LPF Switch for Auto Focus
M	M1-3	Motor Coil Terminal 1 to 3
	MA0-5	Microprocessor Address Data 0-5
	Mbps	Megahertz Bit Per Second
	MD	Modulation
	MD0-7	Microprocessor Data 0-7
	MDT0-7	Microprocessor Data 0-7
	ME (TAPE)	Metal Evaporated (Tape)
	MENB	Focus Motor Enable
	MFF	Manual Focus Far
	MFN	Manual Focus Near
	MHSYNC	Monitor Horizontal Sync Signal
	MIC	Memory In Cassette
	MIG	Meta In Gap
	MIX N.R.D.	Non Rec Data Mix
	MOD	Modulation
	MOUT	Mic Out
	MP (TAPE)	Metal Particle (Tape)
	MPEG	Moving Picture Image Cording Experts Group
	MPEG2	Moving Picture Image Cording Experts Group Phase 2
	MRST	Focus Motor Reset
	MSB	Most Signal Bit
	MVSYNC	Monitor Vertical Sync Signal
N	N/F	Near/Far Focus
	N/P	NTSC/PAL
	NB1-3	Base for NPN Transistor
	NC	No Connection
	NC1-3	Corrector of NPN Transistor
	NCLR	Power On Reset
	NCP1	Clamp Pulse
	NCP2+VDH	Clamp Pulse + Horizontal Drive Pulse
	NCP2+VDM	Clamp Pulse + Gate Pulse
	NDE	Non Liner De-Emphasis
	NE	Emitor of NPN Transistor
	NLE	Non Liner Emphasis
	NR	Noise Reduction
	NRD	Non Rec Data
	NRD BLK	Non Rec Data Blanking
	NRD CLK	No Rec Data Clock
	NRE	Read Enable Input (Low Active)
	NWE	Write Enable (Low Active)
O	OB	Optical Black
	OBCNT	Optical Black Control
	OBREF	Reference Voltage for Optical Black Control
	OE	Output Enable
	OFH	Horizontal Counted Down Clock Signal (Reference)
	OFS	Offset
	OP	Operation AMP Output
	OSD	ON Screen Display
	OVL	Overlap Pulse
	OZ	Optical Zoom

INITIAL/LOGO		ABBREVIATIONS
P	P SW	Power Switch
	PB1-3	PNP Base 1-3
	PBCTL	Play Back Control
	PBCTL	Pre-Branking Control
	PBH	Head Amp Switch
	PBLK	Pre-Blanking (Pulse)
	PC1-3	Corrector of PNP Transistor
	PCBM	Carrier Balance
	PCH	Phase Compensator (Hall AMP)
	PCI	Phase Compensator (Current)
	PCO	Phase Compensator Out
	PCS	Switching Power Control
	PCV	Phase Compensator (Voltage)
	PE	Emitter of PNP Transistor
	PED	Pedestal
	PEDECNT	Pedestal Control
	PENO	Alarm (L)
	PFP	Pilot Frame Position
	PGA, B	Power Ground A, B
	PGC	Pulse Generator Comparator
	PGI	Pulse Generator Input
	PGMM	Pulse Generator Monostable Multivibrator
	PGO	Output of Pulse Generator AMP
	PMODE	Select Signal for Normal / Wide Screen
	PON	Power On
	POR	Power On Reset
	POSCOM	Common Position
	PREAMP	Pre-AMP
	PREBLK	Pre-Blanking
	PT	Protect for V Voltage
	PWM	Pulse Width Modulation
	PWMB	Pulse Width Modulation Pulse
Q	Q2H	Source Output Select
R	R CTL P	Recorded Control Pulse (+)
	R CTL R	Recorded Control Pulse (–)
	R/B	Read/Busy
	R/L	Direction Control for Data Transmition
	RA	Recording AMP
	RA1	Rec AMP 1
	RAC AC	Rec Audio Current
	RAD	Read Address Data
	RAE	Read Address Enable
	RB	Read Busy
	R-B	R Bias
	RCB	R Carrier Balance
	RE	Read Enable
	RE(F), (S)	Rotary Erase Head Transformer
	REB	R Bias
	REC CC	Rec Current Control
	REC CCNT	Rec Current Control
	RECCTRL	Recording Control Pulse
	RECI	Rec Amp Switch

	INITIAL/LOGO	ABBREVIATIONS
	RENCF	Lens Control (Forward)
	RENCR	Lens Control (Reverse)
	RERASE	Rotary Erase Head
	RGBIV1-2	1V Inverted Signal 1-2
	RGO R/G OFF	Offset Voltage for AWT R
	RSF	Capstan Direction (Reverse / Stop / Forward)
	RST	Reset
	RSTB	R Strobe
	RSTPWD	Reset Power Down Input
	RSTR	Reset Read
	RSTW	Reset Write
	RT	Saw Tooth Terminal
	RVCO	Resister for Oscillation
	RW	Read Write
	RWAE	Read Write Enable
S	S PHOT	Supply Photo Transistor
	S/H	Sampling Hold
	S/S	Start/Stop
	SBD	Serial Data
	SBI	Serial Data Input
	SBO	Serial Data Output
	SBT	Serial Clock
	SCAN0-5	Key Scan 0-5
	SCK	Serial Clock
	SCR	Search
	SCR, S.C.R.	Still Cue Review
	SEG.	Segment
	SET	White Balance Set
	SH/IRIS	Shutter/Iris Control
	SHIFT	Capasitor for Phase Shift
	SI	Serial Data Input
	SIC	Shift In Clock Input
	SIOC	Serial In/Out Control
	SMCE	Shaffling Memory Chip Enable
	SMRS	Shaffling Memory Read Strobe
	SMWE	Shaffling Memory Write Enable
	SMWS	Shaffling Memory Read Strobe
	SNAP	Snap Shot
	SNS LED	Sensor LED
	SO	Serial Data Output
	SPA	ATF Smapling Pulse
	SPEN	8 Bit Shift Register Enable
	SPK	Speaker
	SPO	Reset for Switcing Power
	SPST	8 Bit Shift Register Strobe
	SREELP	Supply Reel Pulse
	SRT	Start
	SSA	Start Sync block Area
	SSW	Select Signal for Low Pass Filter
	ST5V	Safety Tab 5V
	STAB	Safety Tab Switch
	STB	Stand by Signal
	STB	Strobe
	SWB	Switching Pre-Drive Pulse
	SYL EC	Cylinder Torque Control
	SYL FG	Cylinder FG
T	T PHOT	Take-up Photo Transistor
	TBC	Time Base Conntrol
	TFT	Thim Film Transistor
	TH	Thermostat for Battery
	TI	Test Mode Select
	TL	Torque Limit
	TM	Sub Code
	TMD	Sub Code Data
	TRE	Tracking Error Signal
	TREEL(P)	Take-up Reel (Pulse)
	TRFIX	Tracking Fix
	TRIWAVE	Tracking Wave
	TRP	Tracking Position
	TRP	Trap
	TSR	Head Switching Refference
	TST	Time Scale Transfer
U	U/V SEL	R-Y/B-Y Select Signal
	UNLOAD	Un-Loading
	UNRE	Microprocessor Read Enable
	UNWE	Microprocessor Write Enable
	UV	R-Y/B-Y
	UV SEL	R-Y/B-Y Select Signal
V	V1-V4	V. CCD Drive Pulse
	VB	VH Filter Switching
	VCE	Power Terminal
	VCNTL	Video Control
	VCO	Voltage Control Oscillator
	VCP	Shift Clock Output for Vertical Drive
	VCTLD	Video Control
	VCTRL	Voltage Charge Control
	VD	Vertical Drive Pulse
	VDDX	X Drive Power for Colour LCD
	VDDXY	XY Drive Power for Colour LCD
	VDDY	Y Drive Power for Colour LCD
	VDREC	Video Delayed Rec
	Vgg	Voltage for Gate IC
	Vgl	Gate off Voltage
	VID	Video Signal Out
	VIN	Video In
	VITC	Vertical Interval Time Code
	VITERBI	One of Signal Detection Method
	VL	Low Voltage
	VLC	Variable Length Cording
	VLOCKP	Artificial Sync Pulse
	VLP	Artificial Sync Pulse
	VM	Motor Voltage
	VMD	Velocity Mode Data
	VMD1-3	Electric Shutter Mode

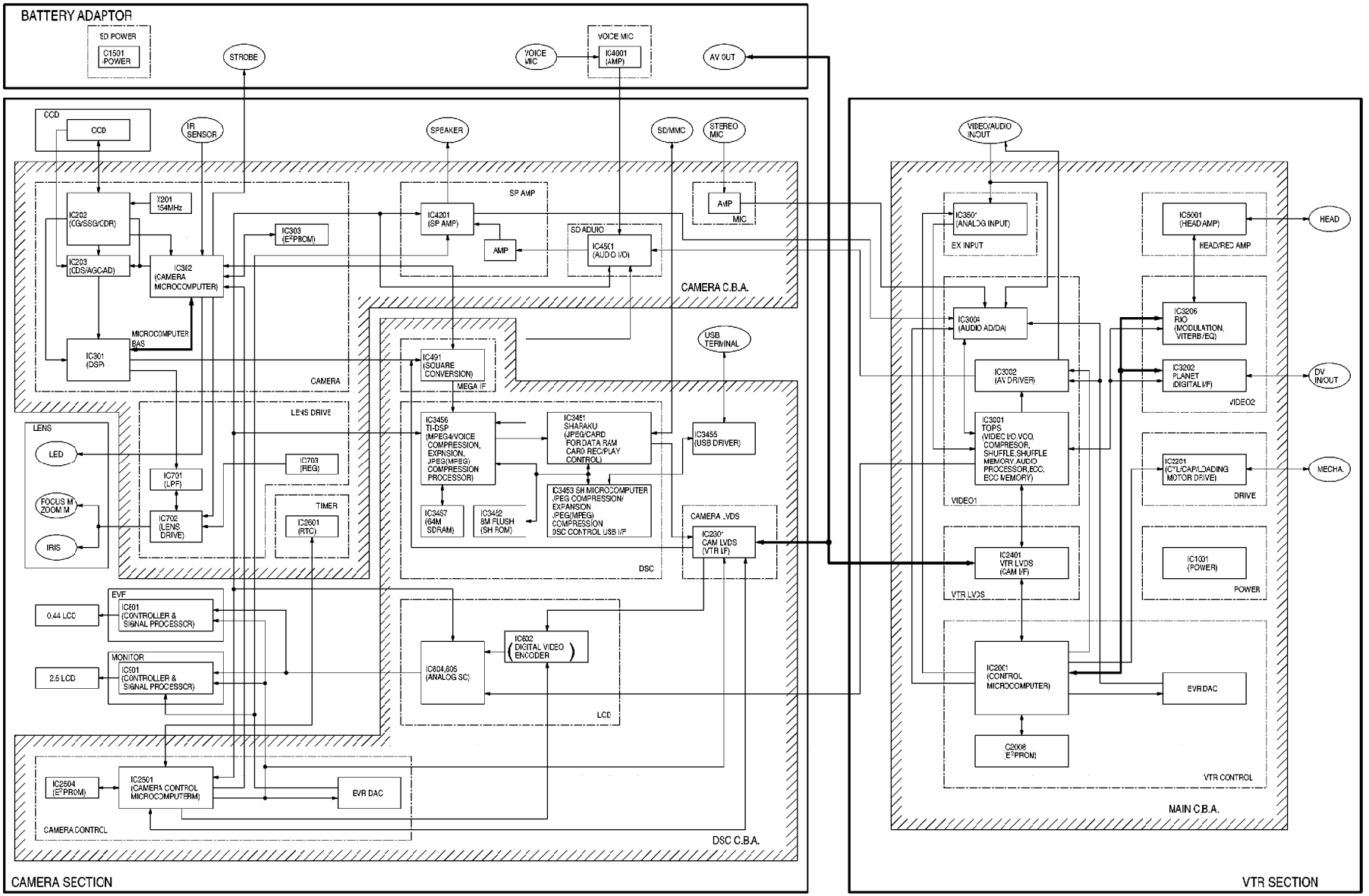
	INITIAL/LOGO	ABBREVIATIONS		INITIAL/LOGO	ABBREVIATIONS
	VMODE	NTSC/PAL Select Switch			
	VMVH	VH Filter Switching			
	VORP	Video Overlap			
	VRB	Voltage Refference Bottom			
	VRBS	Voltage Refference Bottom Output			
	VREF1R3V	Refference Voltage 1.3V			
	VREF3R3V	Refference Voltage 3.3V			
	VREFH	Refference Voltage High Side			
	VREFL	Refference Voltage Low Side			
	VRI	Refference Voltage Input			
	VRO	Refference Voltage Output			
	VRT	Voltage Refference Top			
	VRTS	Voltage Refference Top Output			
	VS	Switching Comparator			
	VSS	Vertical Sync Signal			
	VSSX	X Driver Power for Colour LCD			
	VSSXY	X-Y Driver Power for Colour LCD			
W	W/N	Mode Select for Window Mode			
	W/N	Wide / Normal			
	WAD	Write Address Enable			
	WAE	Write Address Enable			
	WAERAE	Write Address Enable			
	WARI	Interrupt			
	WB	White Balance			
	WE	Write Enable			
	WEM	Memory Write Enable			
	WHD	Wide Horizontal Drive Pulse			
	WIDE A	Wide Zoom			
	WSB	B AGC Control			
	WSR	R AGC Control			
	WTV	Wide TV			
X	XP	FG Logic Reset			
Y	Y FM0-7	Y Field Memory 0-7			
	YCE	Cylinder Error Code			
	YGC	Y Gain Control			
	YMO 0-7	Y Field Memory 0-7			
	YNCST	Noize Canceller			
	YNR	Luminance Noise Reduction			
	YSDP 0-7	Digital Y Out 0-7			
Z	Z.ENC	Zoom Encoder			
	Z.MIC	Zoom Mic			
	ZENC	Zoom Encoder Output			
	ZMDIR	Zoom Drive			
	ZMEN	Zoom Enable			
	ZMT	Zoom Motor Tele Side			
	ZMT (+)/(–)	Zoom Motor (+)/(–)			
	ZMTER	Zoom Motor Tele Side			
	ZMW	Zoom Motor Wide Side			
	ZSW	Zoom Switch			

10 WAVEFORM TABLE

 IC801-1 REC/PLAY 0.3Vp-p (20usec.div.)	 IC801-2 REC/PLAY 0.2Vp-p (20usec.div.)	 IC801-11 REC/PLAY 8.0Vp-p (20usec.div.)	 IC801-14 REC/PLAY 8.0Vp-p (20usec.div.)	 IC801-16 REC/PLAY 8.0Vp-p (20usec.div.)
 IC801-46 REC/PLAY 3.0Vp-p (20usec.div.)	 IC801-47 REC/PLAY 0.8Vp-p (20usec.div.)	 IC801-48 REC/PLAY 0.6Vp-p (20usec.div.)	 IC901-40 REC/PLAY 8.0Vp-p (20usec.div.)	 IC901-43 REC/PLAY 8.0Vp-p (20usec.div.)
 IC901-45 REC/PLAY 8.0Vp-p (20usec.div.)	 IC901-53 REC/PLAY 0.3Vp-p (20usec.div.)	 IC901-54 REC/PLAY 0.2Vp-p (20usec.div.)	 IC901-59 REC/PLAY 0.6Vp-p (20usec.div.)	 IC901-61 REC/PLAY 0.8Vp-p (20usec.div.)
 IC901-62 REC/PLAY 3.0Vp-p (20usec.div.)				

11 SCHEMATIC DIAGRAMS

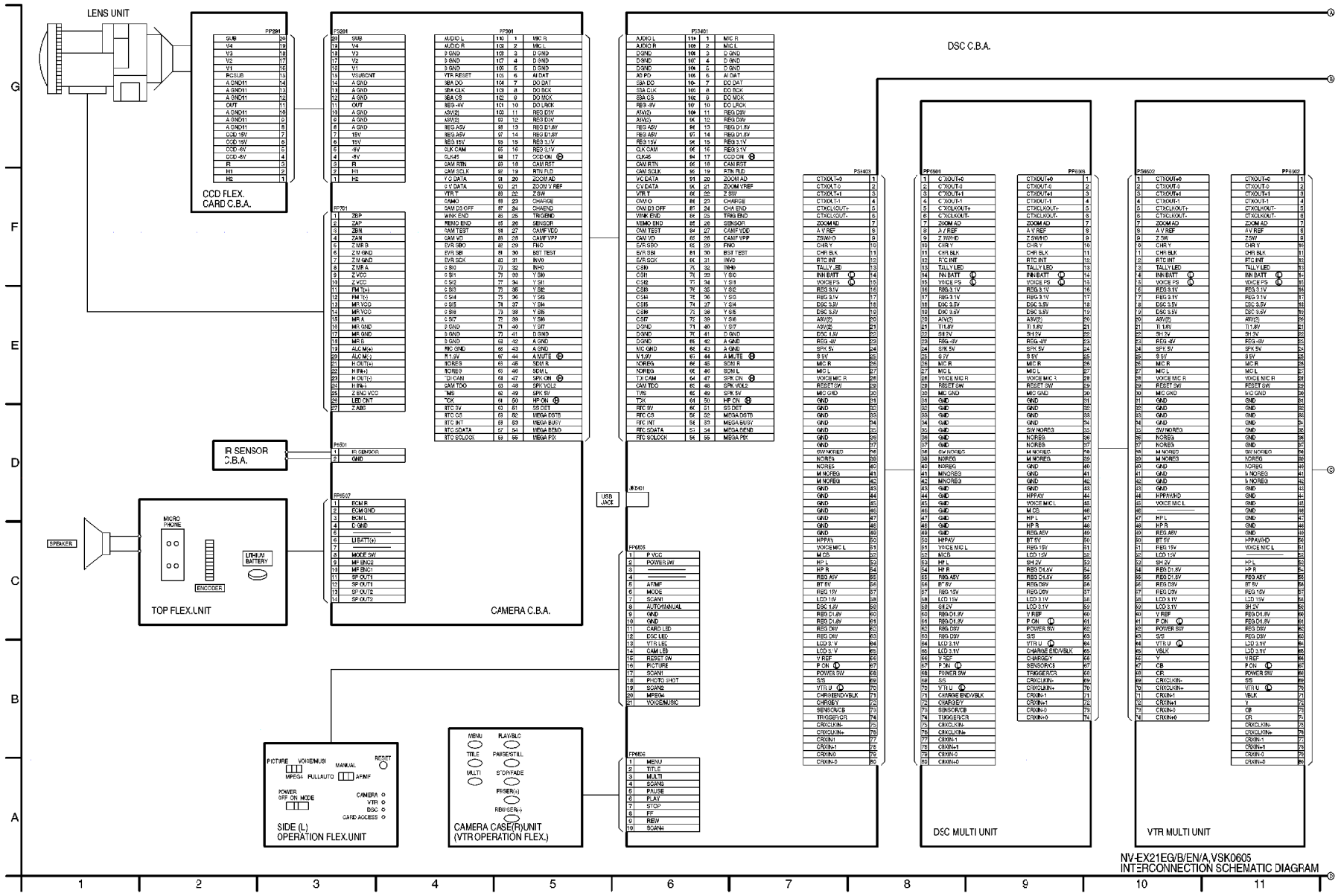
11.1. OVERALL SCHEMATIC DIAGRAM



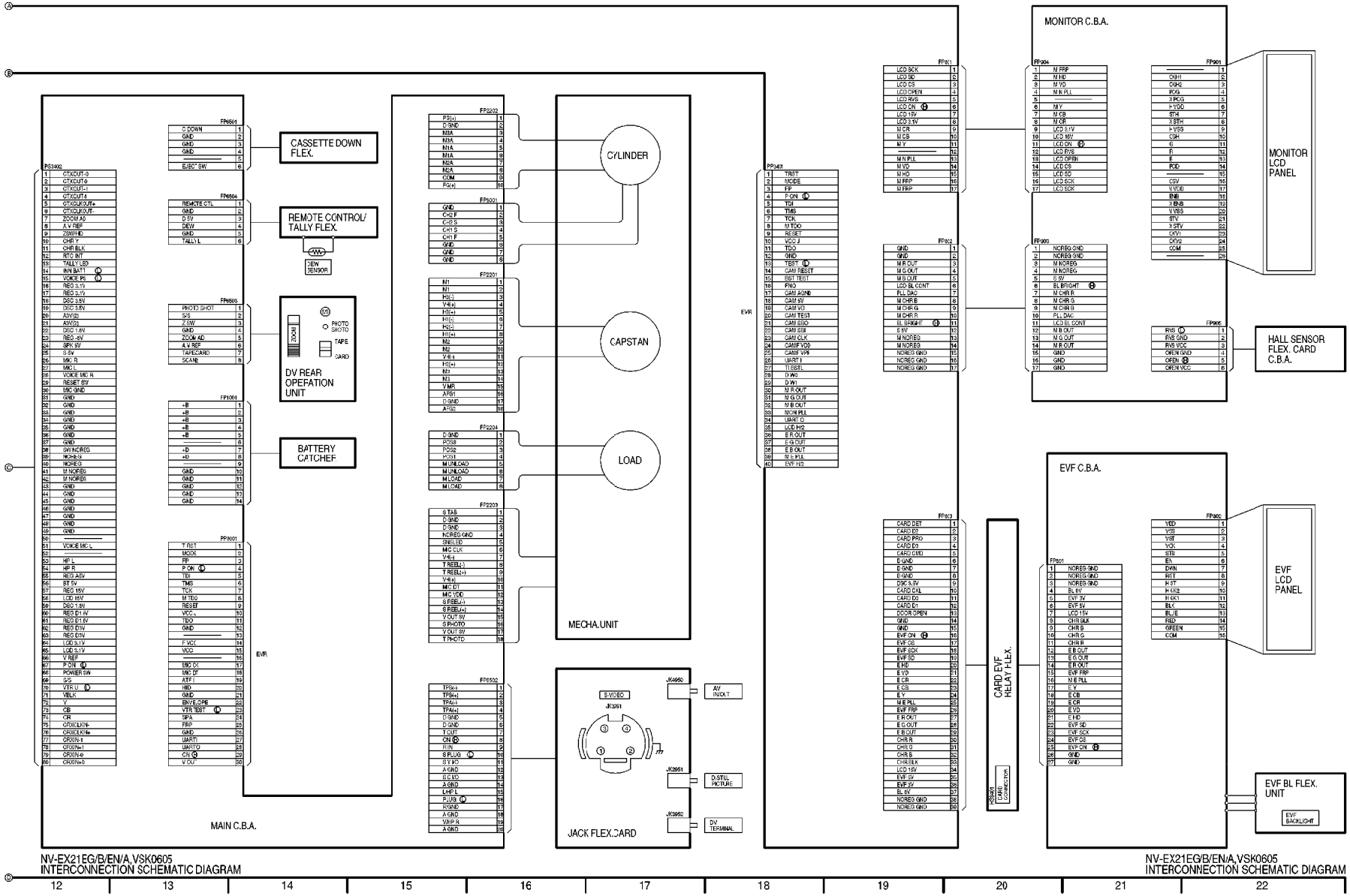
NV-EX21EG/B/EN/A,VSK0605
OVERALL SCHEMATIC DIAGRAM

11.2. INTERCONNECTION SCHEMATIC DIAGRAM

MC-Service



MC-Service


MONITOR C.B.A.
MONITOR LCD PANEL
HALL SENSOR FLEX. CARD C.B.A.
EVF C.B.A.
EVF LCD PANEL
EVF BL FLEX. UNIT
CASSETTE DOWN FLEX.
REMOTE CONTROL/ TALLY FLEX.
DV REAR OPERATION UNIT
BATTERY CATCHER
CYLINDER
CAPSTAN
LOAD
MECHA.UNIT
JACK FLEX.CARD
CARD EVF RELAY FLEX.
MAIN C.B.A.
S-VIDEO
AV IN/OUT
D.STILL PICTURE
DV TERMINAL
NV-EX21EG/B/EN/A,VSK0605 INTERCONNECTION SCHEMATIC DIAGRAM
12
13
14
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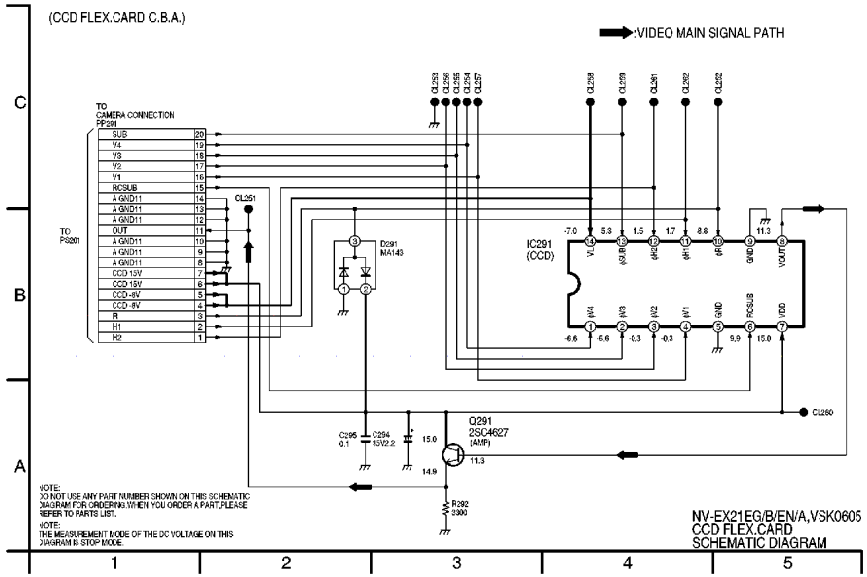
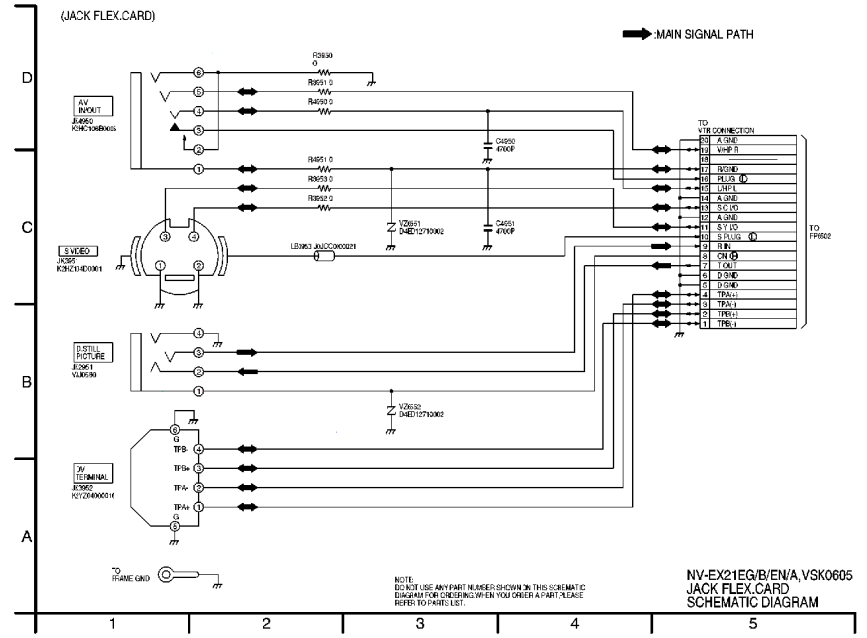
22

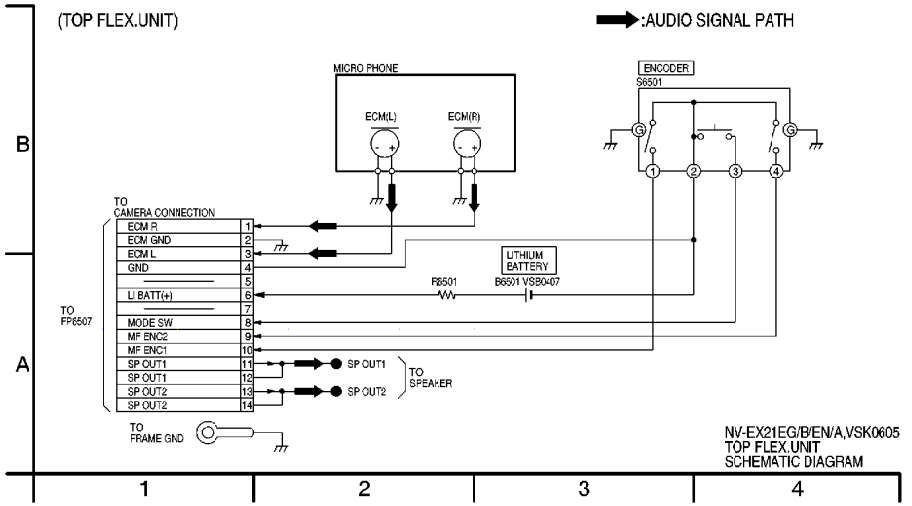
11.3. CCD FLEX. CARD SCHEMATIC DIAGRAM



11.4. JACK FLEX. CARD SCHEMATIC DIAGRAM

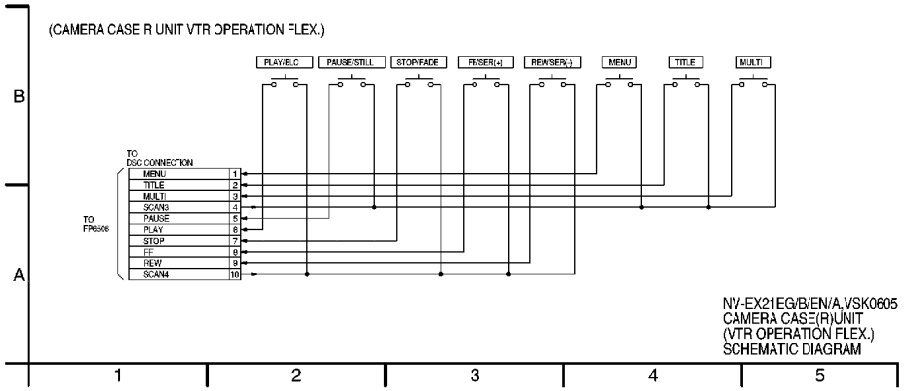


11.5. TOP FLEX. UNIT SCHEMATIC DIAGRAM

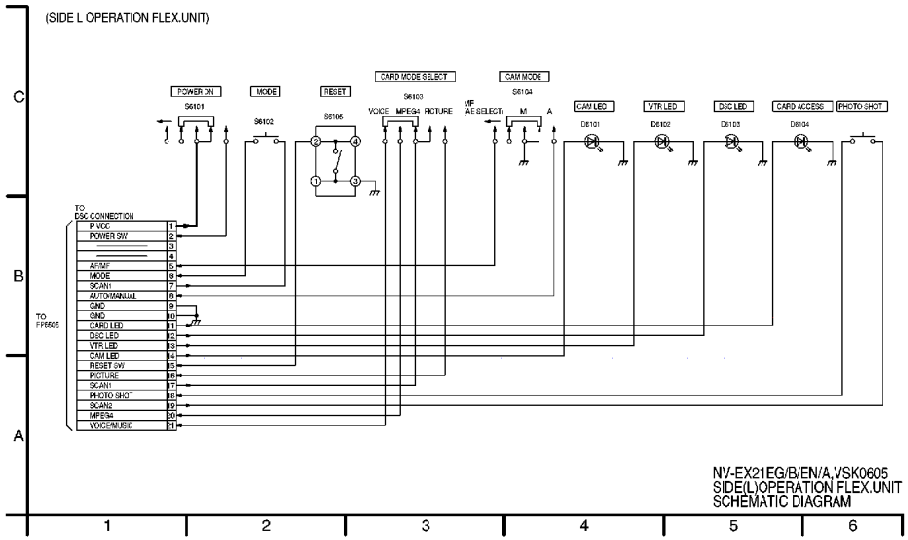


11.6. CAMERA CASE (R) UNIT (VTR OPERATION FLEX.) SCHEMATIC DIAGRAM

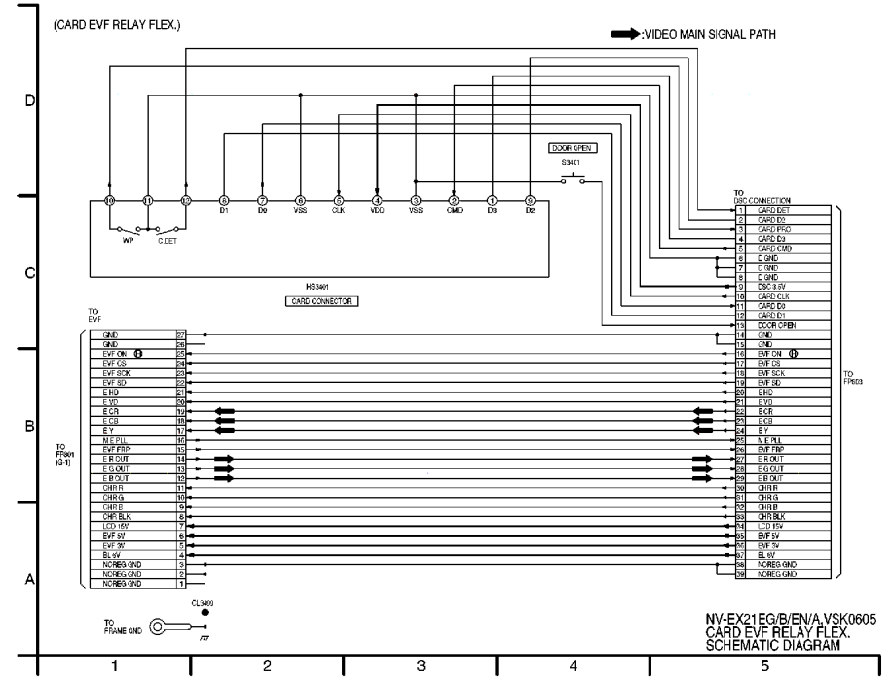
MC-Service



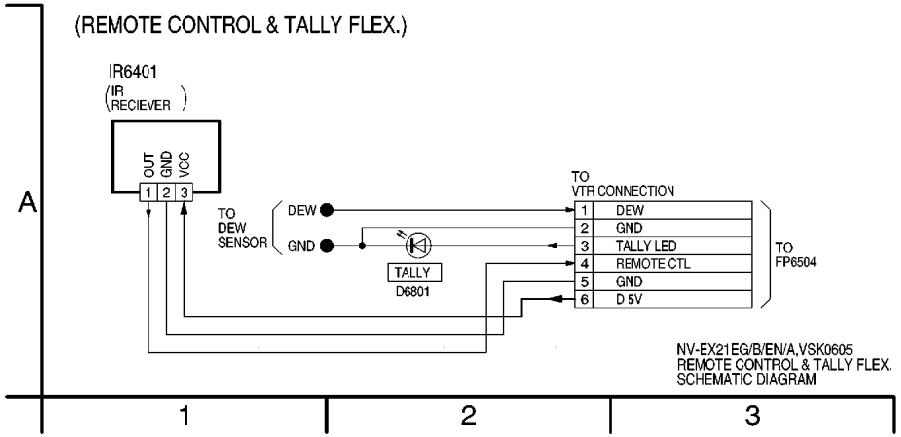
11.7. SIDE (L) OPERATION FLEX. UNIT SCHEMATIC DIAGRAM



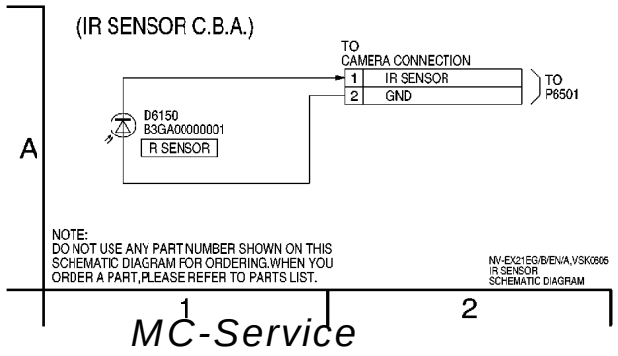
11.8. CARD EVF RELAY FLEX. SCHEMATIC DIAGRAM



11.9. REMOTE CONTORL & TALLY FLEX. SCHEMATIC DIAGRAM

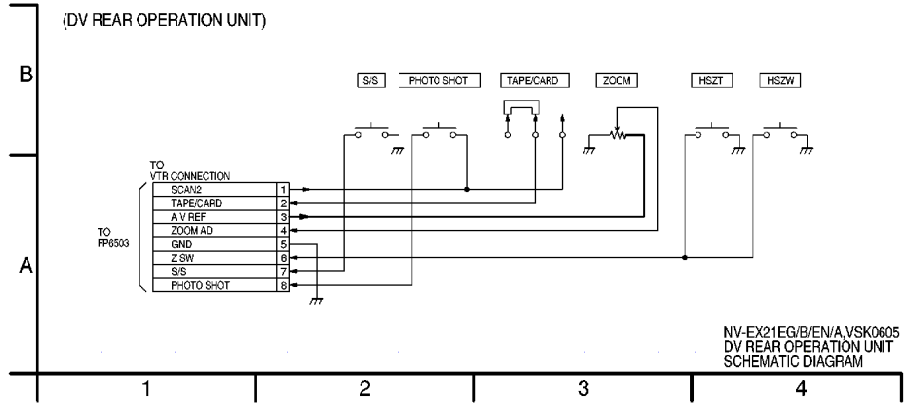


11.10. IR SENSOR SCHEMATIC DIAGRAM

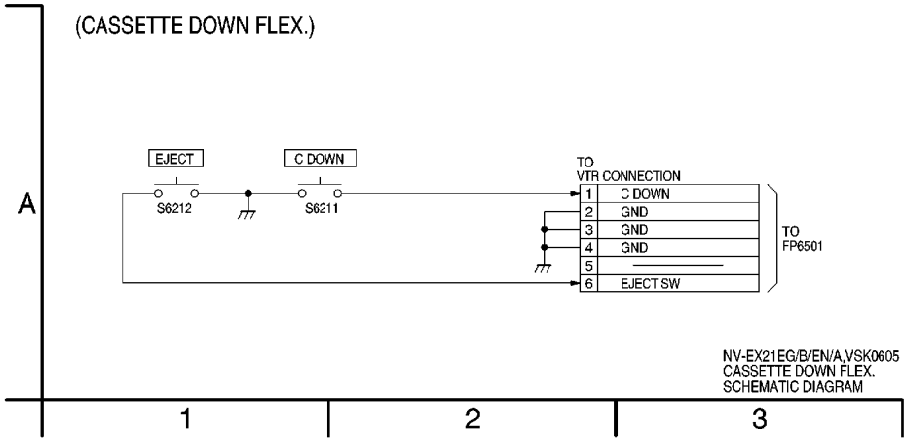


MC-Service

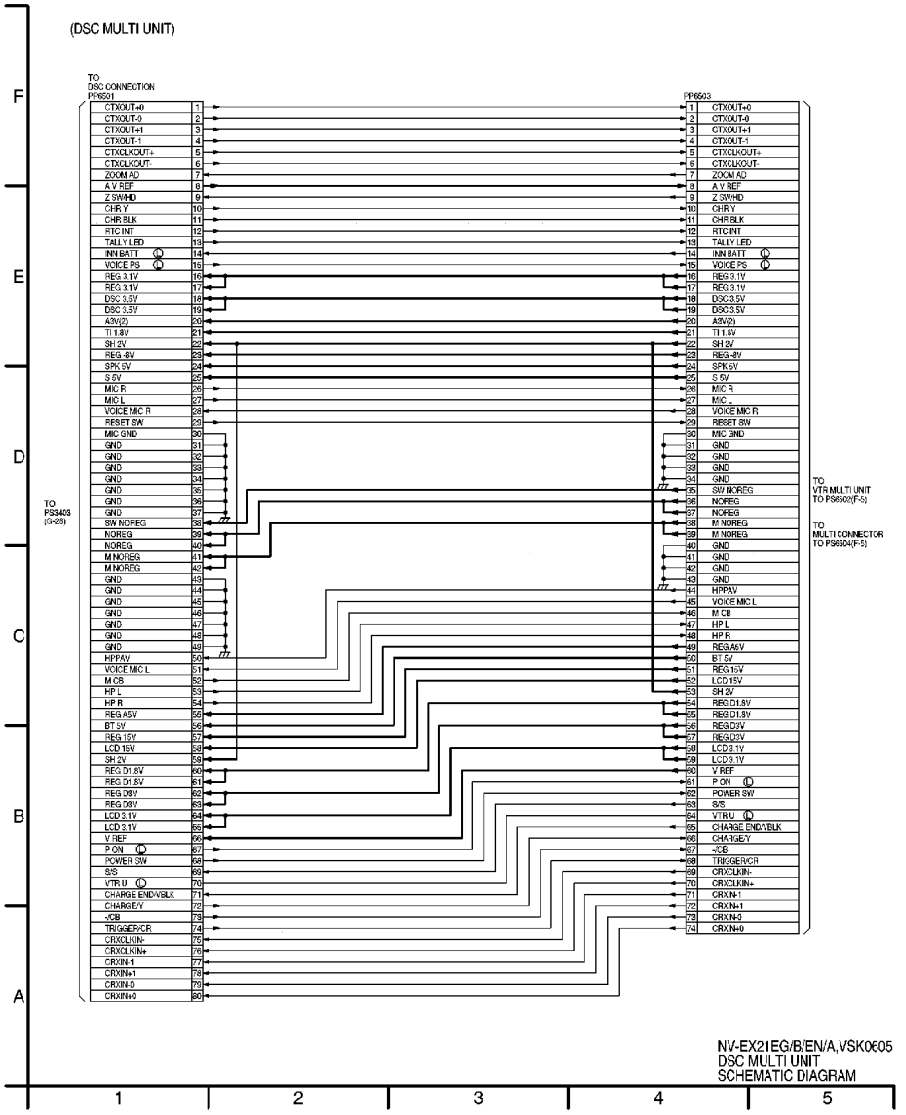
11.11. DV REAR OPERATION UNIT SCHEMATIC DIAGRAM



11.12. CASSETTE DOWN FLEX. SCHEMATIC DIAGRAM

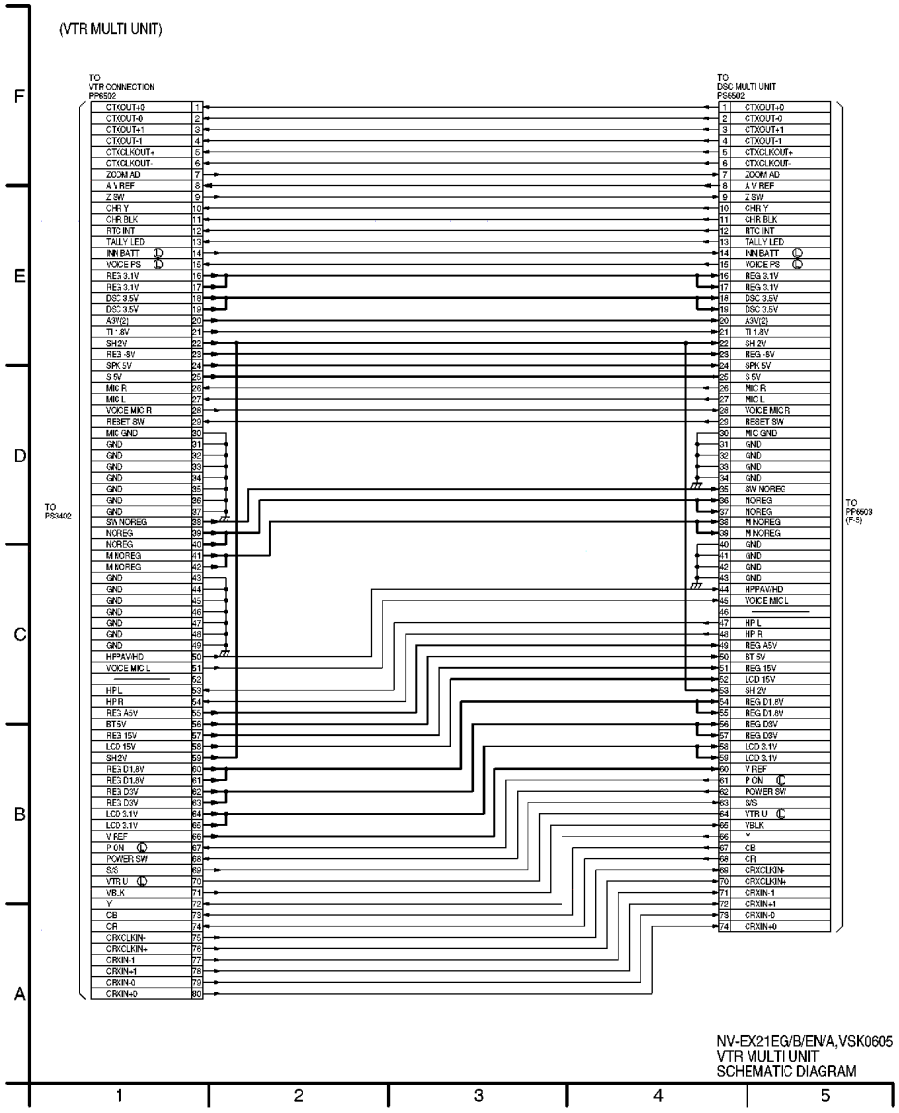


11.13. DSC MULTI UNIT SCHEMATIC DIAGRAM



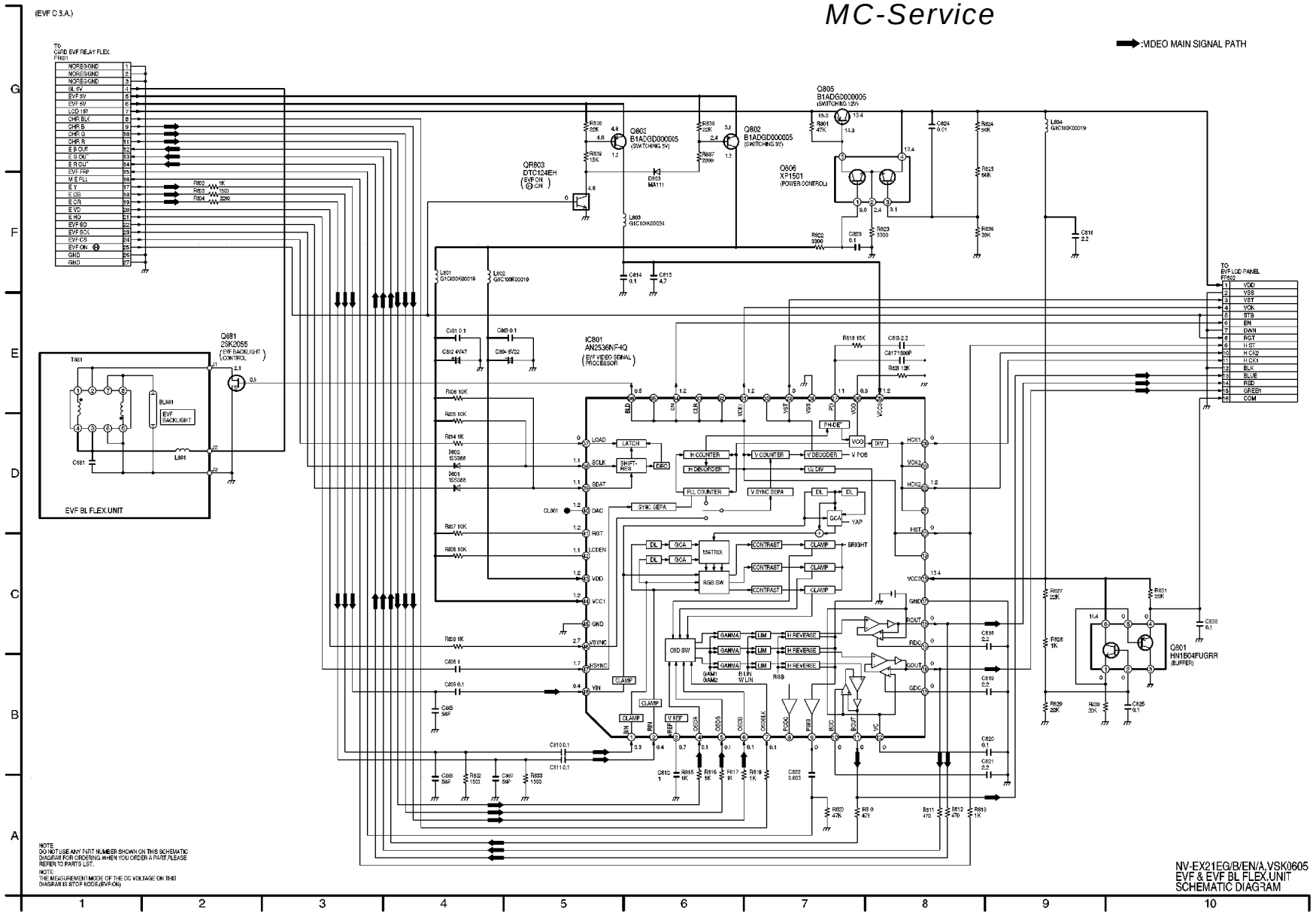
MC-Service

11.14. VTR MULTI UNIT SCHEMATIC DIAGRAM



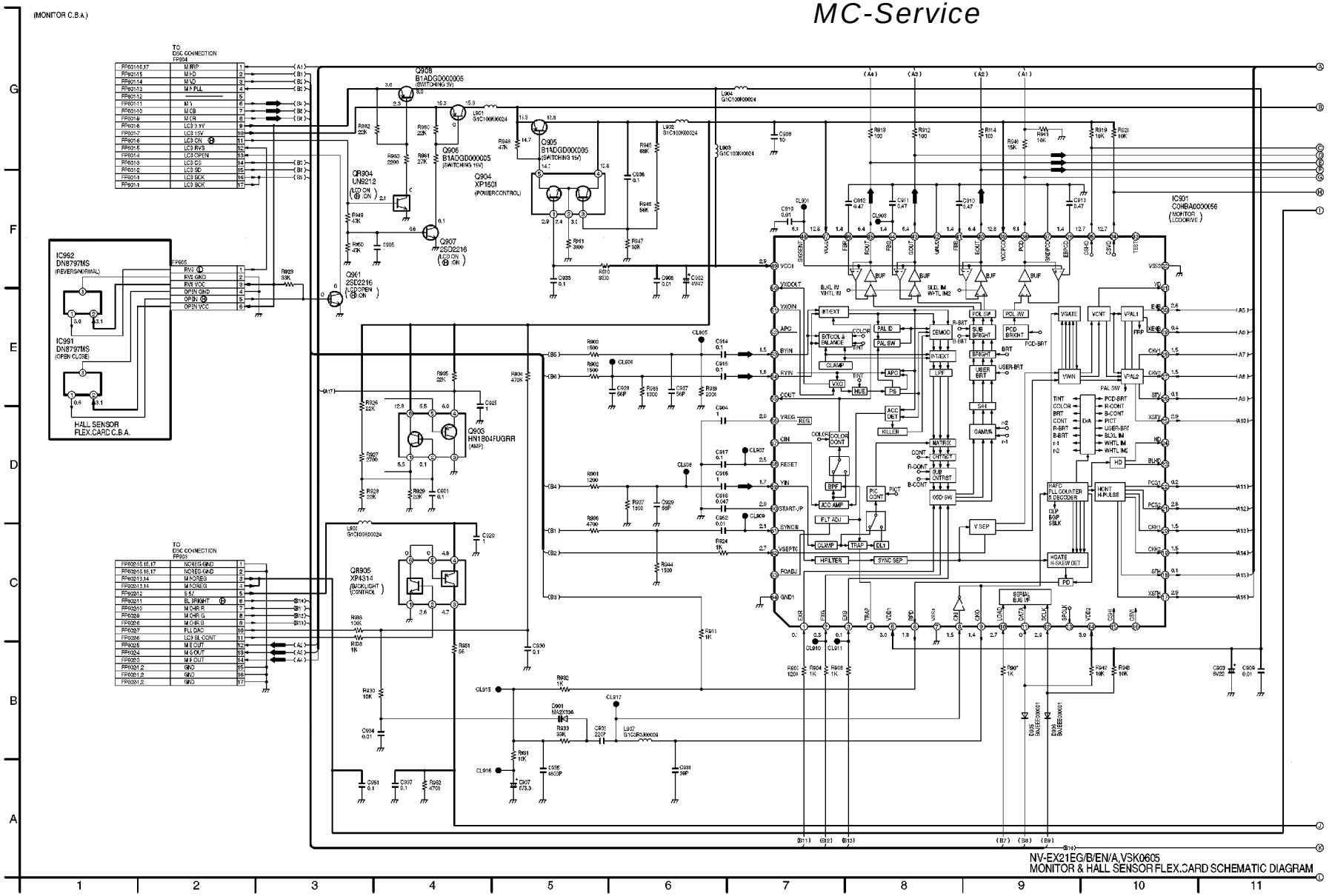
MC-Service

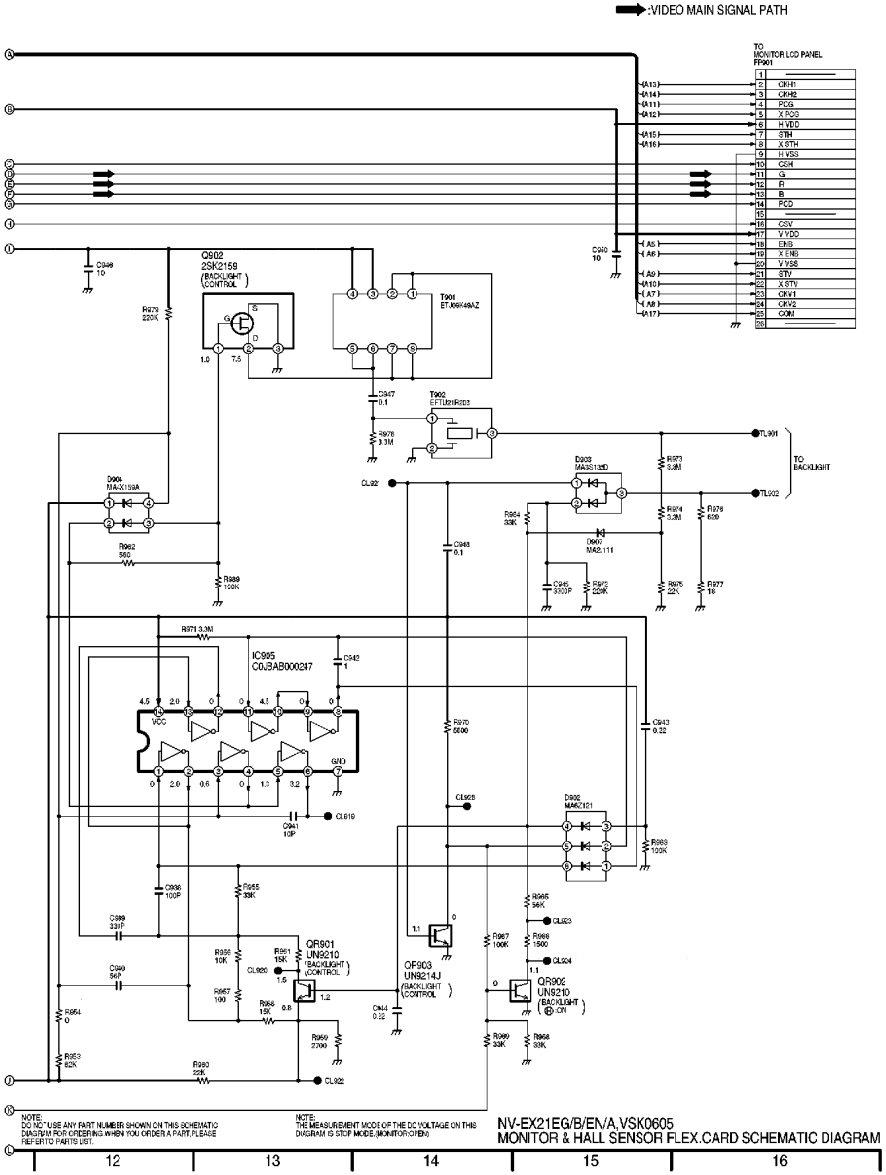
11.15. EVF & EVF BL FLEX. UNIT SCHEMATIC DIAGRAM


MC-Service
(EVF C.S.A.)
:VIDEO MAIN SIGNAL PATH
TO CARD EVF RELAY FLEX. FR601
TO EVF LCD PANEL FR602
Q805 B1ADGD000005 (SWITCHING 12V)
Q804 B1ADGD000005 (SWITCHING 5V)
Q800 B1ADGD000005 (SWITCHING 5V)
QR803 DTC124EH (EVF ON)
Q806 XP1501 (POWER CONTROL)
Q881 2SK2055 (EVF BACKLIGHT CONTROL)
EVF BL FLEX UNIT
IC801 AN2536NF-HQ (EVF VIDEO SIGNAL PROCESSOR)
Q901 HN1B04FUGRR (BUFFER)
NOTE:
DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.
NOTE:
THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE(EVF-ON)
NV-EX21EG/B/EN/A,VSK0605
EVF & EVF BL FLEX.UNIT
SCHEMATIC DIAGRAM

11.16. MONITOR & HALL SENSOR FLEX. CARD SCHEMATIC DIAGRAM

MC-Service



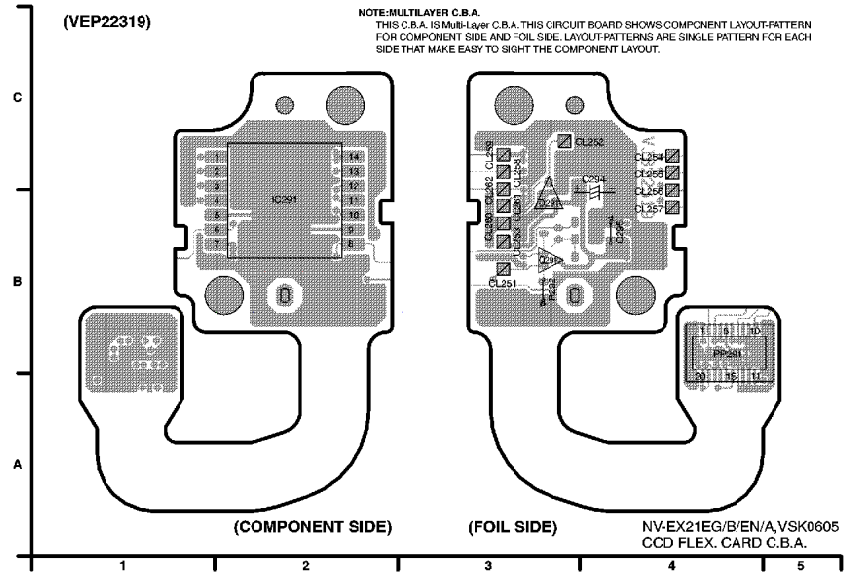

:VIDEO MAIN SIGNAL PATH
TO MONITOR LCD PANEL FP901
Q902 2SK2159 (BACKLIGHT CONTROL)
T901 ET-66F49AZ
T902 EFTU21R203
D903 MA3133D
D901 MA2X119A
D902 MA2J21
IC905 C0JBAB0000247
QR901 UN9210 (BACKLIGHT CONTROL)
QF903 UN9214J (BACKLIGHT CONTROL)
QR906 UN9210 (B.ON)
TO BACKLIGHT
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.(MONITOR:OTHER)

NV-EX21EG/B/EN/A,VSK0605
MONITOR & HALL SENSOR FLEX.CARD SCHEMATIC DIAGRAM

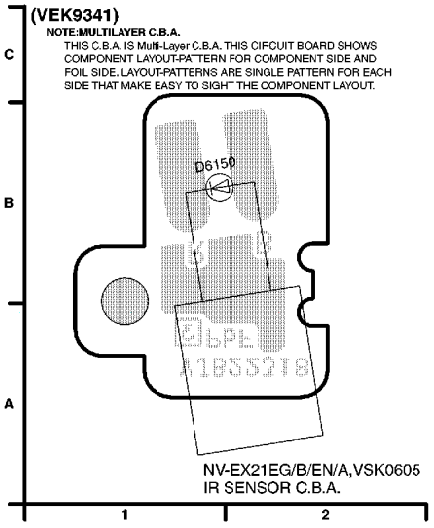
MC-Service

12 CIRCUIT BOARD ASSEMBLIES

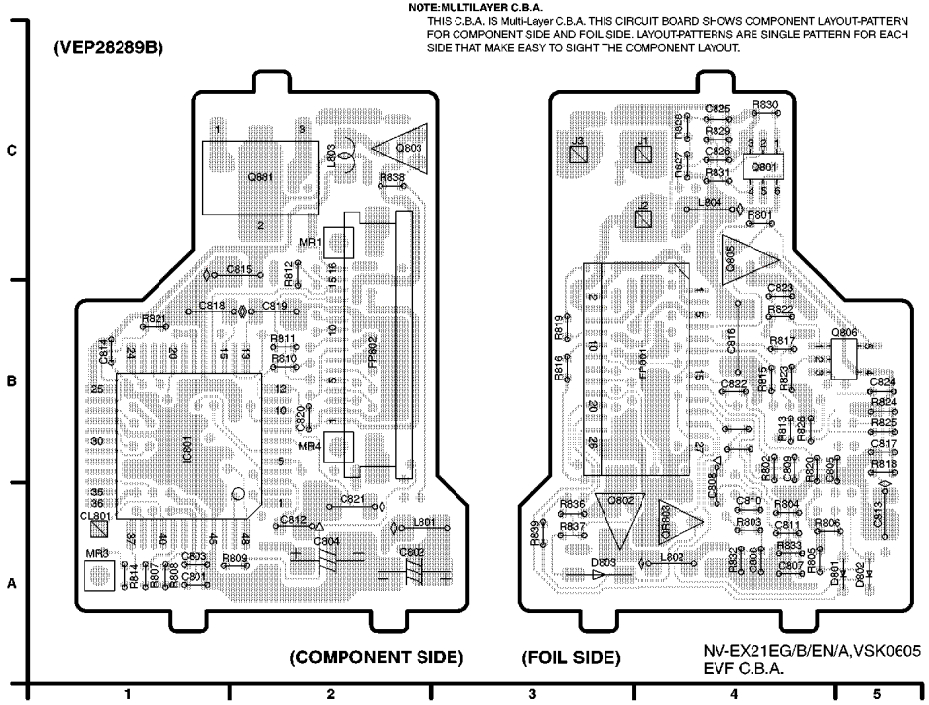
12.1. CCD FLEX. CARD C.B.A.


(VEP22319)
NOTE:MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE. LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.
(COMPONENT SIDE)
(FOIL SIDE)
NV-EX21EG/B/EN/A,VSK0605
CCD FLEX. CARD C.B.A.

12.2. IR SENSOR C.B.A.

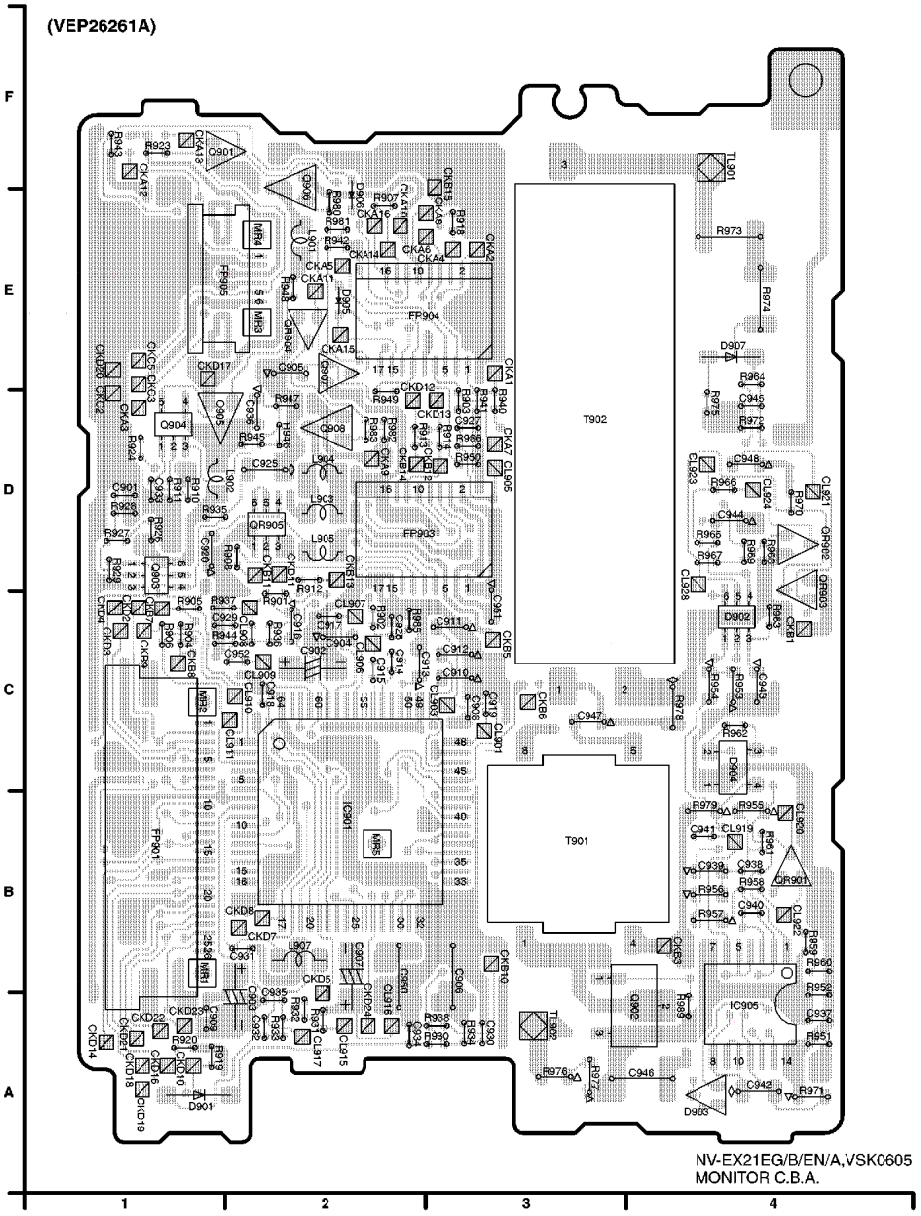

(VEK9341)
NOTE:MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE. LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.
D6150
NV-EX21EG/B/EN/A,VSK0605
IR SENSOR C.B.A.

12.3. EVF C.B.A.


(VEP28289B)
NOTE:MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE. LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.
(COMPONENT SIDE)
(FOIL SIDE)
NV-EX21EG/B/EN/A,VSK0605
EVF C.B.A.

MC-Service

12.4. MONITOR C.B.A.



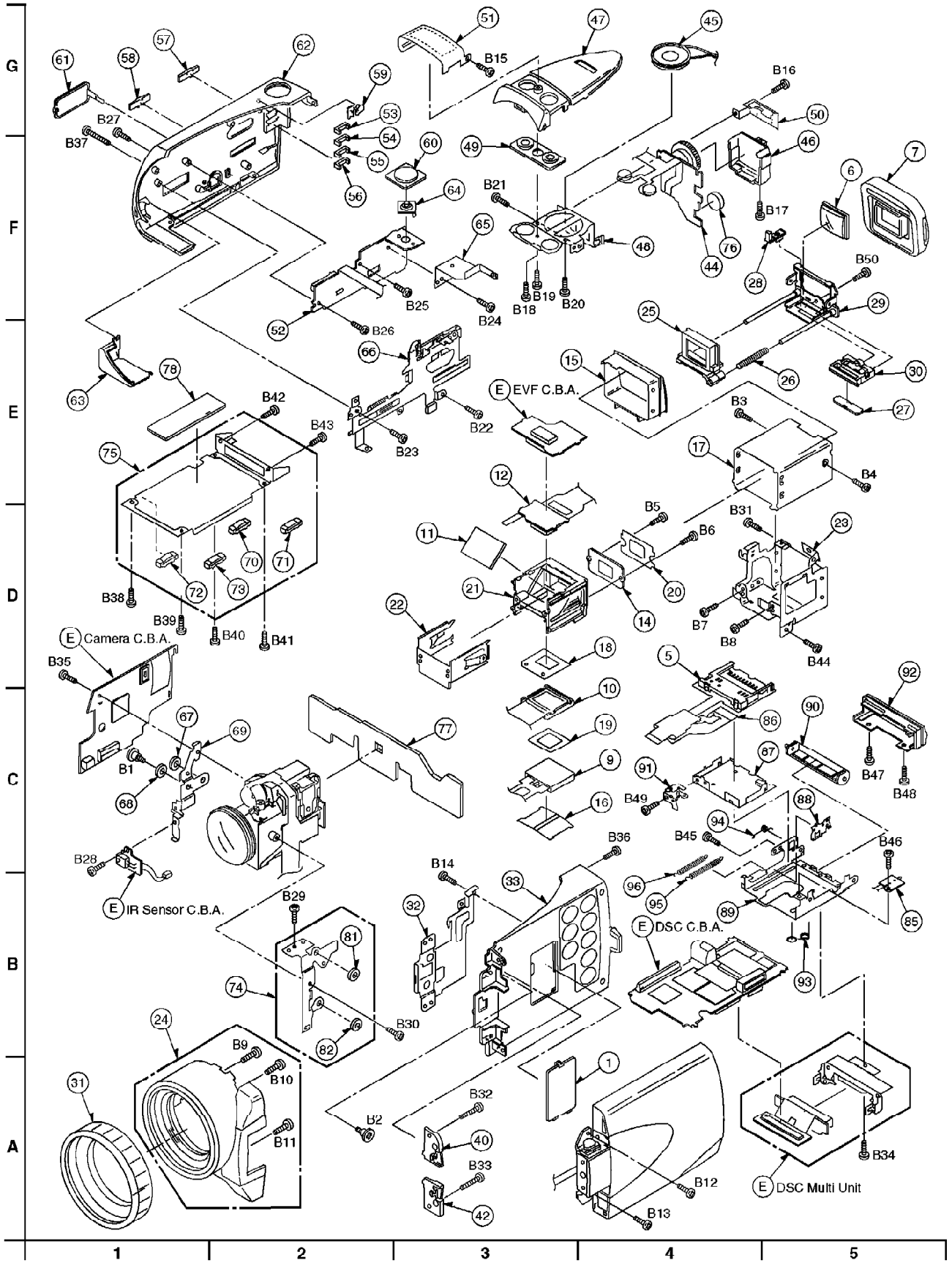
Monitor C.B.A.									
Integrated Circuit		**Connector**		C917	C-2	R911	D-1	R958	B-4
IC901	B-2	FP901	B-1	C918	C-2	R912	D-2	R959	B-4
IC905	A-4	FP903	D-2	C919	C-3	R913	D-2	R960	B-4
Transistor		FP904	E-2	C920	D-1	R914	D-3	R961	B-4
Q901	F-2	FP905	E-2	C925	D-2	R918	E-3	R962	C-4
Q902	A-4	**Diode**		C927	D-3	R919	A-1	R963	C-4
Q903	D-1	D901	A-1	C928	C-2	R920	A-1	R964	E-4
Q904	D-1	D902	C-4	C929	C-2	R923	F-1	R965	D-4
Q905	D-1	D903	A-4	C930	A-3	R924	D-1	R966	D-4
Q906	E-2	D904	C-4	C931	B-2	R926	D-1	R967	D-4
Q907	E-2	D905	E-2	C932	A-2	R927	D-1	R968	D-4
Q908	D-2	D906	E-2	C933	D-1	R928	D-1	R969	D-4
Transistor & Resistor		D907	E-4	C934	A-2	R929	D-1	R970	D-4
QR901	B-4	**Transformer**		C935	A-2	R930	A-3	R971	A-4
QR902	D-4	T901	B-3	C936	D-2	R931	A-2	R972	D-4
QR903	C-4	T902	D-3	C937	A-4	R932	A-2	R973	E-4
QR904	E-2	**Coil**		C938	B-4	R933	A-2	R974	E-4
QR905	D-2	L901	E-2	C939	B-4	R934	A-3	R975	D-4
Test Point		L902	D-1	C940	B-4	R935	D-1	R976	A-3
CL901	C-3	L903	D-2	C941	B-4	R936	C-2	R977	A-3
CL903	C-3	L904	D-2	C942	A-4	R937	C-1	R978	C-4
CL905	D-3	L905	D-2	C943	C-4	R938	A-3	R979	B-4
CL906	C-2	L907	B-2	C944	D-4	R940	D-3	R980	E-2
CL907	C-2	**Capacitor**		C945	D-4	R941	D-3	R981	E-2
CL908	C-2	C901	D-1	C946	A-4	R942	E-2	R982	D-2
CL909	C-2	C902	C-2	C947	C-3	R943	F-1	R983	D-2
CL910	C-2	C903	A-2	C948	D-4	R944	C-2	R985	C-2
CL911	C-2	C904	C-2	C950	B-2	R945	D-2	R986	D-3
CL915	A-2	C905	E-2	C951	C-3	R946	D-2	R989	A-4
CL916	A-2	C906	B-3	C952	C-2	R947	D-2		
CL917	A-2	C907	B-2	**Resistor**		R948	E-2		
CL919	B-4	C908	C-3	R901	C-2	R949	D-2		
CL920	B-4	C909	A-1	R902	C-2	R950	D-3		
CL921	D-4	C910	C-3	R903	D-3	R951	A-4		
CL922	B-4	C911	C-3	R904	C-1	R952	A-4		
CL923	D-4	C912	C-3	R905	C-1	R953	C-4		
CL924	D-4	C913	C-2	R906	C-1	R954	C-4		
CL928	D-4	C914	C-2	R907	E-2	R955	B-4		
TL901	F-4	C915	C-2	R908	D-2	R956	B-4		
TL902	A-3	C916	C-2	R910	D-1	R957	B-4		

ADDRESS INFORMATION

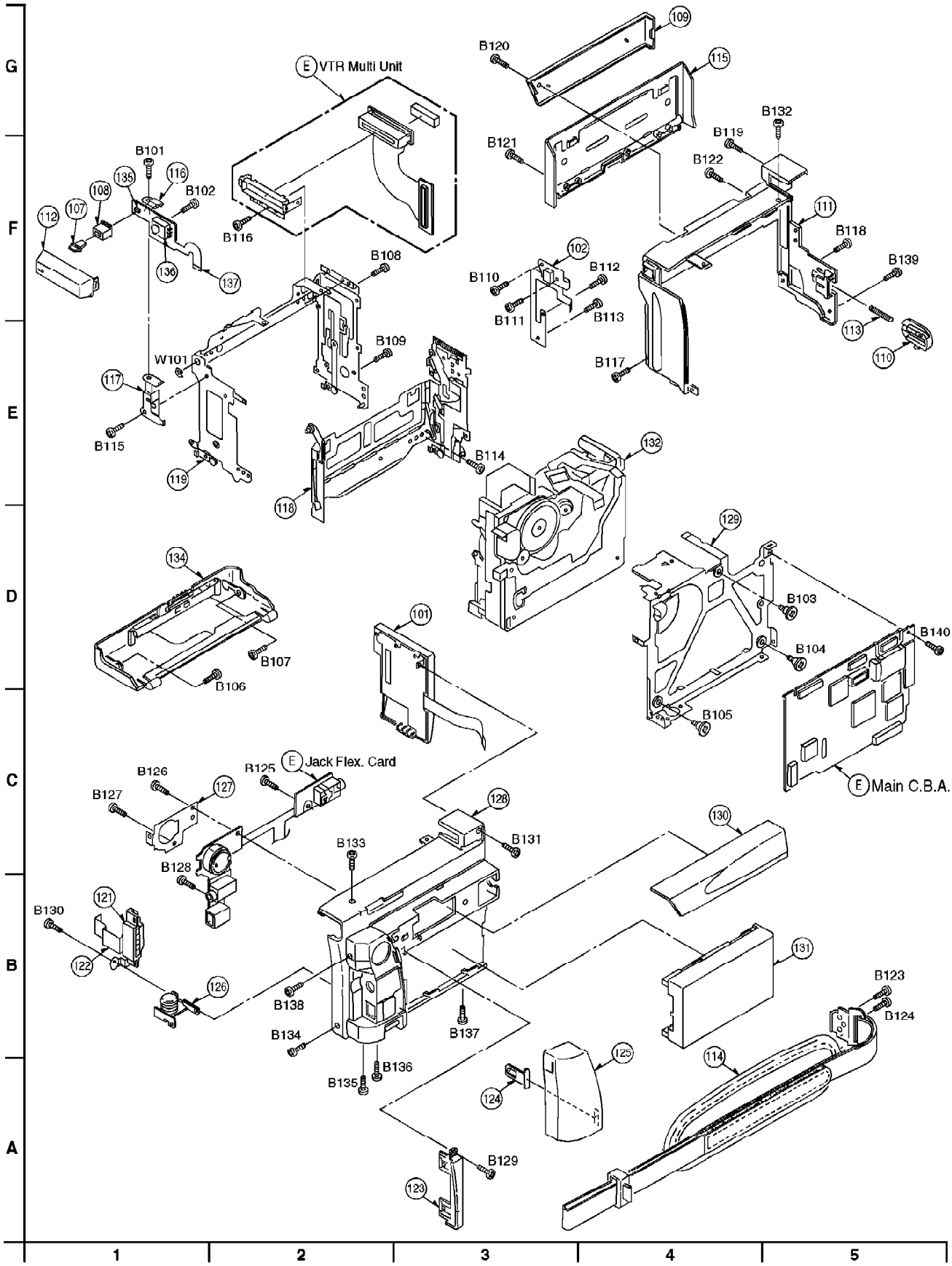
MC-Service

13 EXPLODED VIEWS

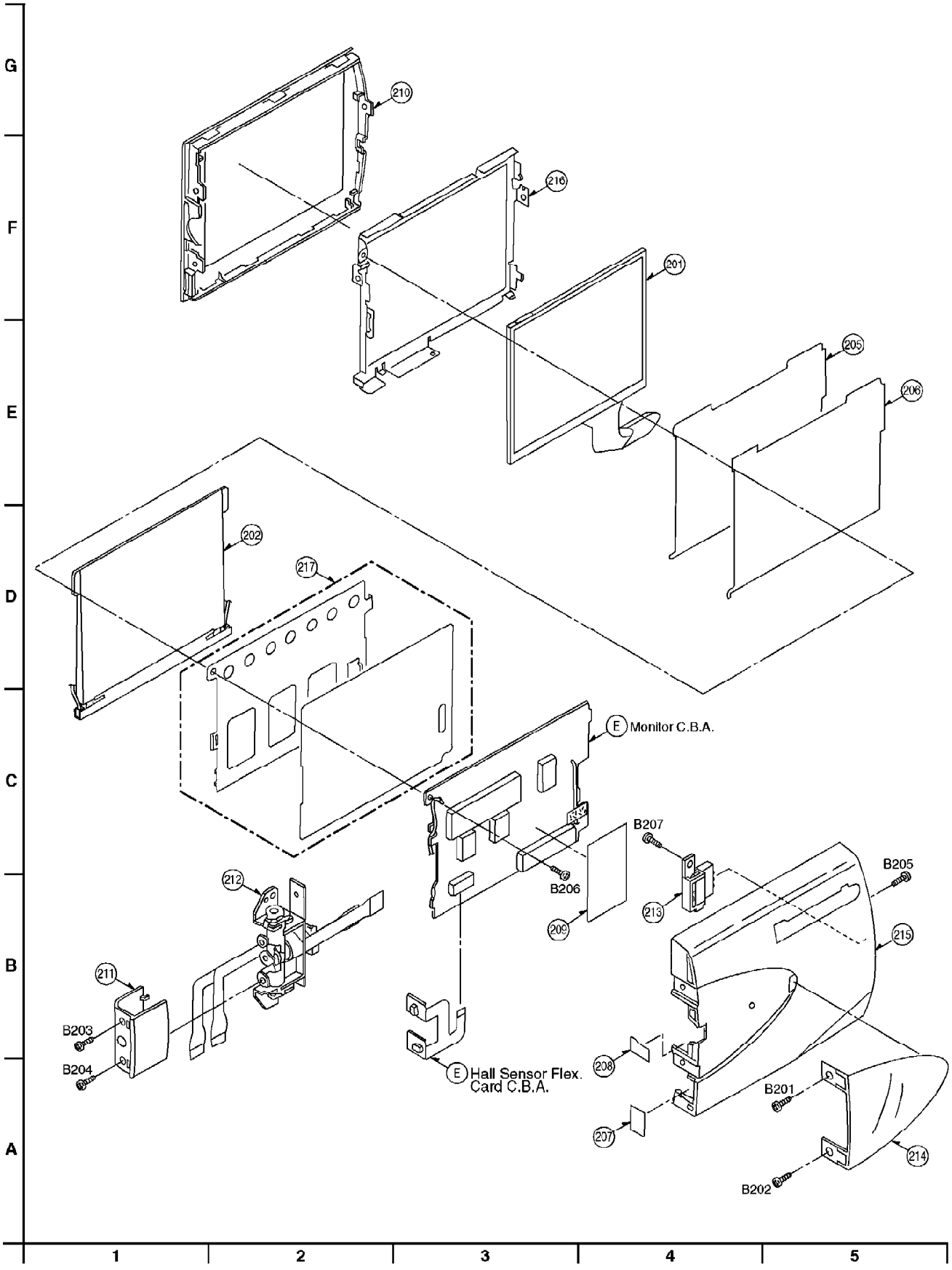
13.1. FRAME & CASING SECTION (1)



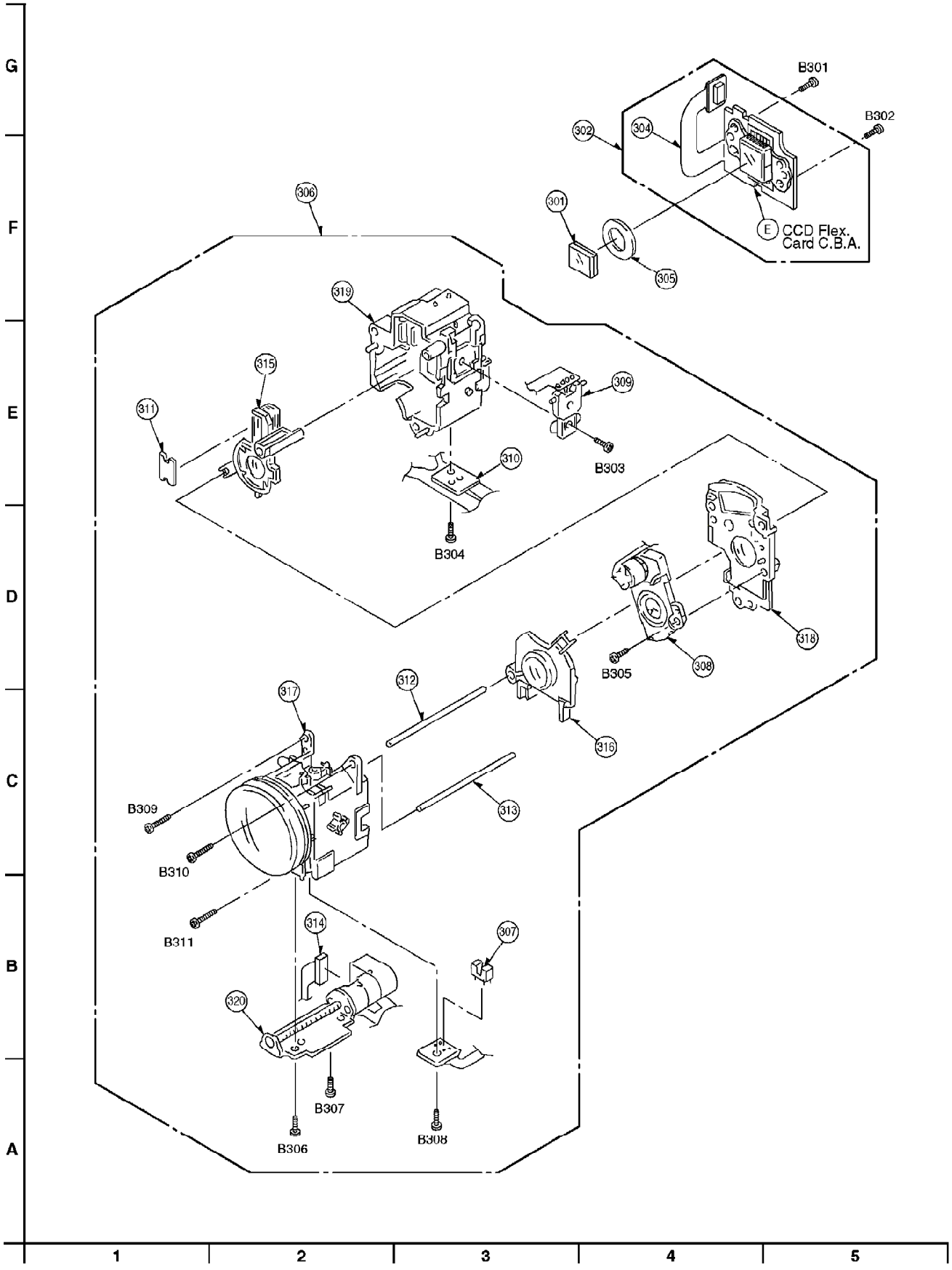
13.2. FRAME & CASING SECTION (2)



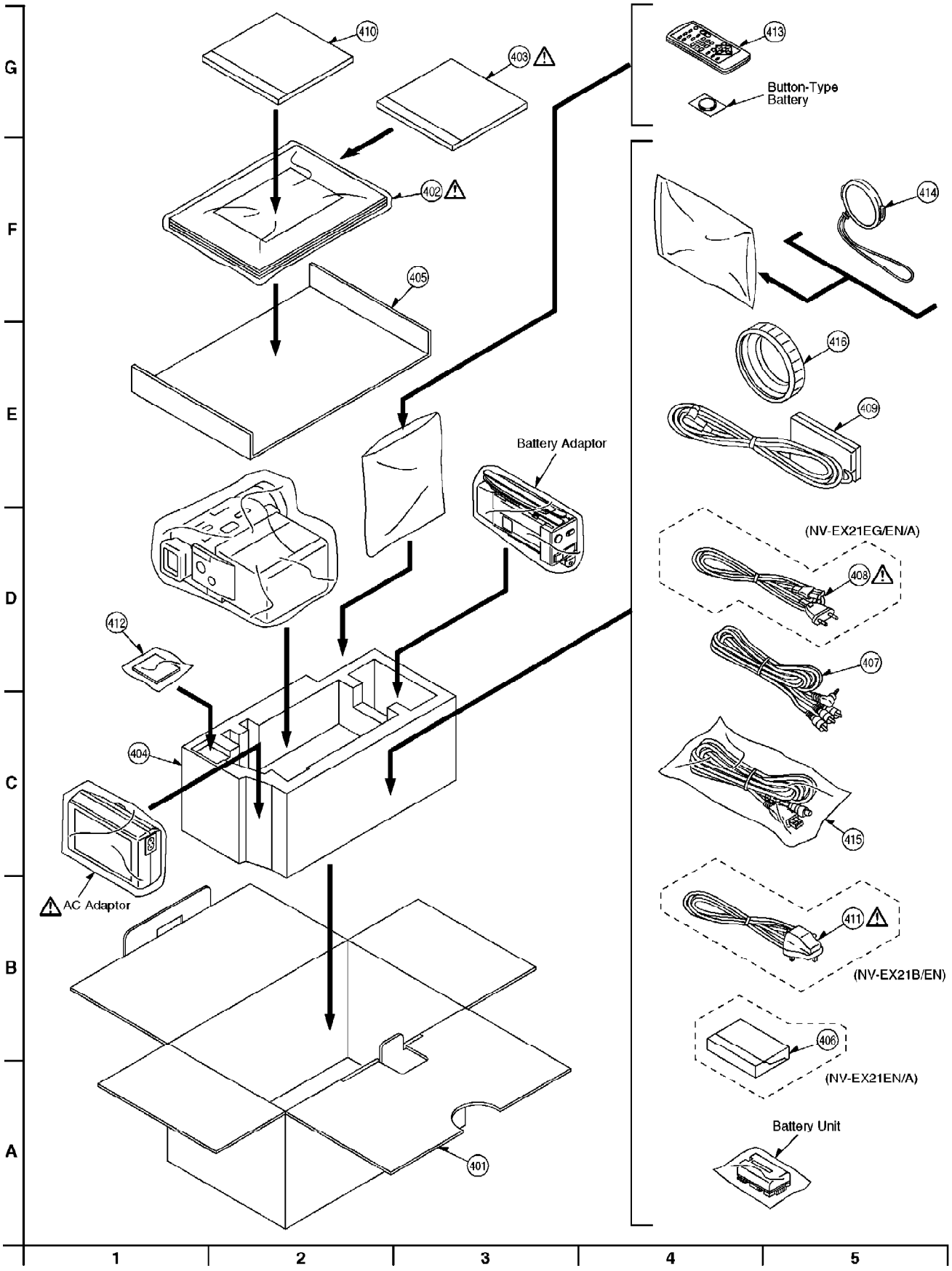
13.3. LCD SECTION



13.4. CAMERA LENS SECTION



13.5. PACKING PARTS & ACCESSORIES SECTION



14 REPLACEMENT PARTS LIST

14.1. FRAME & CASING SECTION
(1) PARTS LIST

Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark △ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
1	VKF3378	EVR LID	
5	K1NA09E00012	SD HOLDER FLEX. U.	
6	VDL0972	EVF LENS	
7	VMG1395	EYE CAP	
9	A2CD00000030	EVF BACKLIGHT	
10	L5BDDXZ00004	EVF LCD PANEL	
11	VDL1151	EVF REFLECTOR	
12	VEK9332	EVF BL FLEX. U.	
14	VGQ5833	EVF PROTECTOR COVER	
15	VGQ6229	EVF GUIDE HOLDER	
16	VGQ6232	BL FIXING PLATE	
17	VGQ6233	EVF SLIDE HOLDER	
18	VGQ6234	EVF LCD MASK	
19	VGQ6269	EVF BL FIXING TAPE	
20	VGQ6274	PROTECT COVER SHEET	
21	VKM5660	LCD HOLD PIECE	
22	VMC1723	EVF CLICK SPRING	
23	VMP6885	EVF GUIDE FRAME	
24	VYK0A29	FRONT CASE (1) U.	
25	VGQ6231	EVF LENS HOLDER	
26	VMB3266	GUDE POLE SPRING	
27	VGQ6230	TORQUE PIECE	
28	VGU8891	EVF VIEW ADJ.KNOB	
29	VYK0A27	EVF VIEW ADJ.BASE ANGLE U.	
30	VGQ6228	EVF KNOB HOLDER	
31	VYP8263	LENS HOOD U.	
32	VMP6871	HINGE FIXING PLATE	
33	VYK0A83	CAMERA CASE (R) (2) U.	
40	VYK0A33	MAGNET PIECE (UPPER) U.	
42	VYK0A34	MAGNET PIECE (LOWER) U.	
44	VEK9337	TOP FLEX. U.	
45	VEK9342	SPEAKER U.	
46	VGQ6217	TOP FLEX. PIECE	
47	VKM5709	TOP CASE	
48	VMP6875	SPEAKER FIXING ANGLE	
49	VMT1212	MIC DUMPER RUBBER	
50	VSC5256	TOP EARTH PLATE	
51	VYQ2224	MIC NET U.	
52	VEK9336	SIDE (L) OPERATION FLEX.U.	
53	VGL0849	PANEL LIGHT	
54	VGL0849	PANEL LIGHT	
55	VGL0849	PANEL LIGHT	
56	VGL0849	PANEL LIGHT	
57	VGU8895	REC MODE SELECT KNOB	
58	VGU8896	FOCUS SELECT KNOB	
59	VGU8897	RESET BUTTON	
60	VGU8898	PHOTO SHOT BUTTON	
61	VKF3383	USB JACK COVER	
62	VKM5706	CAMERA CASE (L)	
63	VKW2933	IR SENSOR WINDOW	
64	VMG0763	PHOTO SHOT RUBBER SW	
65	VMP6897	PHOTO SHOT ANGLE	
66	VXA7229	CAMERA RELEASE MECHA. U.	
67	VMG1107	DUMPER RUBBER	
68	VMG1107	DUMPER RUBBER	
69	VMP6898	LENS FRAME (L)	
70	VGQ6243	GUIDE PIECE	
71	VGQ6243	GUIDE PIECE	
72	VGQ6243	GUIDE PIECE	
73	VGQ6243	GUIDE PIECE	
74	VYQ2223	LENS FRAME (R) U.	
75	VYQ2235	GUIDE FRAME U.	
76	VSB0407	LITHIUM BATTERY	
77	VSC5279	CCD RADIATION RUBBER	
78	VSC5298	DSC RADIATION RUBBER	
81	VMG1107	DUMPER RUBBER	
82	VMG1107	DUMPER RUBBER	
85	VSP0584	CARD DETECT SW	K0L1BB000022
86	VJB28290	CARD EVF RELAY FLEX.	
87	VXA7233	SD HOLDER PLATE U.	
88	VMP6889	SD HOLDER DRIVE ANGLE	
89	VXA7234	SD BASE FRAME U.	
90	VYK0B07	SD DRAM U.	
91	VXA7235	STOPPER ANGLE U.	
92	VGQ6236	SD COVER	
93	VMB3541	SD TORQUE SPRING	
94	VMB3543	DRAM RETURN SPRING	
95	VMB3542	DRAM DRIVE ANGLE SPRING	
96	VMB3563	HOLDER DRIVE ANGLE SPRING	
B1	VHD1353	SCREW	
B2	VHD1437	SCREW	
B3	VHD1209	SCREW	
B4	VHD1209	SCREW	
B5	VHD1303	SCREW	
B6	VHD1303	SCREW	
B7	XQS16+AJ45	SCREW	
B8	XQS16+AJ45	SCREW	
B9	XQN16+BJ5FZ	SCREW	
B10	XQN16+BJ5FZ	SCREW	
B11	XQN16+BJ5FZ	SCREW	
B12	VHD1411	SCREW	
B13	VHD1411	SCREW	
B14	XQN16+BJ35	SCREW	
B15	VHD1220	SCREW	
B16	XQN14+B2FN	SCREW	
B17	XQN16+BJ3FZ	SCREW	
B18	XQN16+BJ3FZ	SCREW	
B19	XQN16+BJ4FN	SCREW	
B20	XQN16+BJ4FN	SCREW	
B21	XQN16+B2FN	SCREW	
B22	XQN16+BJ35	SCREW	
B23	XQN16+BJ35	SCREW	
B24	XQN16+BJ35	SCREW	
B25	XQN16+BJ35	SCREW	
B26	XQN16+BJ35	SCREW	
B27	XQN16+B2FN	SCREW	
B28	XQN16+A3	SCREW	
B29	XQN16+BJ3	SCREW	
B30	XQN16+BJ3	SCREW	
B31	XQN16+BJ4FN	SCREW	
B32	XQN16+BJ6FN	SCREW	
B33	XQN16+BJ6FN	SCREW	
B34	XQN16+B2FN	SCREW	
B35	XQN16+B4FN	SCREW	
B36	XQN16+B4FN	SCREW	
B37	XQN16+B8FN	SCREW	
B38	XQS16+A3FN	SCREW	
B39	XQS16+A3FN	SCREW	
B40	XQS16+A3FN	SCREW	
B41	XQS16+A3FN	SCREW	
B42	XQS16+A3FN	SCREW	
B43	XQS16+A3FN	SCREW	
B44	XQS16+A2FN	SCREW	
B45	XQS16+A2FN	SCREW	
B46	VHD1439	SCREW	
B47	VHD1439	SCREW	
B48	VHD1439	SCREW	
B49	XQN16+B15F	SCREW	
B50	XQS16+AJ3	SCREW	

MC-Service

14.2. FRAME & CASING SECTION (2) PARTS LIST

Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark △ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
101	N9ZZ00000109	DV REAR OPERATION U.	
102	VEK9339	CASSETTE DOWN FLEX.	
107	VGL0945	TALLY PANEL LIGHT	
108	VGQ6224	TALLY PIECE	
109	VGQ6225	MECHA. ADJ. PIECE	
110	VGU8890	BATTERY LOCK KNOB	
111	VKM5659	SIDE CASE (L)	
112	VKW2931	REMOTE CONTROL WINDOW	
113	VMB3538	BATTERY LOCK SPRING	
114	VYC0867	GRIP BELT U.	
115	VYK0A50	CASSETTE COVER U.	
116	VEK8163	DEW SENSOR	EYHS78D 14
117	VMP6878	DEW SENSOR ANGLE	
118	VXA7224	CUT HOLDER U.	
119	VYQ2240	MAIN FRAME (1) U.	
121	VEK8719	BATTERY CATCHER	K4ZZ040 00026
122	VWJ1504	POWER BUS FLEX.	
123	VGQ6222	BATTERY CATCHER PIECE	
124	VGQ6223	JACK COVER HINGE	
125	VKF3380	JACK COVER	
126	VMP6876	TRIPOD FRAME	
127	VMP6879	S JACK ANGLE	
128	VYK0C90	SIDE CASE (R) (1) U.	
129	VYQ2225	MECHA. FRAME U.	
130	VKF3378	EVR COVER	
131	VYK0C91	DUMMY BATTERY CASE U.	
132	VXY1626	MECHA. U.	
134	VYK0A48	BOTTOM COVER U.	
135	CL170HRCDT	DIODE(TALLY)	B3AAB00 00052
136	PNA4611M05VT	IR RECIEVER	
137	VJB000U8	REMOTE CONTROL & TALLY FLEX.	
B101	XQN16+B2FN	SCREW	
B102	XQN16+B2FN	SCREW	
B103	VHD1133	SCREW	
B104	VHD1133	SCREW	
B105	VHD1133	SCREW	
B106	VHD1376	SCREW	
B107	VHD1376	SCREW	
B108	XQN16+B2FN	SCREW	
B109	XQN16+B2FN	SCREW	
B110	XQN14+B12	SCREW	
B111	XQN14+B12	SCREW	
B112	XQN14+B12	SCREW	
B113	XQN14+B12	SCREW	
B114	XQN16+BJ3FN	SCREW	
B115	XQN16+B15	SCREW	
B116	XQN16+B2FZ	SCREW	
B117	XQN16+B2FZ	SCREW	
B118	XQN16+B2FZ	SCREW	
B119	XQN16+B2FZ	SCREW	
B120	XQN16+B4FZ	SCREW	
B121	XQN16+B4FZ	SCREW	
B122	XQN16+B4FZ	SCREW	
B123	XQS16+A4FN	SCREW	
B124	XQS16+A4FN	SCREW	
B125	XQN16+BJ4FN	SCREW	
B126	XQN16+BJ4FN	SCREW	
B127	XQN16+BJ4FN	SCREW	
B128	XQN16+BJ4FN	SCREW	
B129	XQN16+BJ4FN	SCREW	
B130	XQN16+BJ4FN	SCREW	
B131	XQN16+B2FZ	SCREW	
B132	XQN16+B4FZ	SCREW	
B133	XQN16+B4FZ	SCREW	
B134	XQN16+B4FZ	SCREW	
B135	XQN16+B4FZ	SCREW	
B136	XQN16+B4FZ	SCREW	
B137	XQN16+B4FZ	SCREW	
B138	XQN16+B6FZ	SCREW	
B139	XQN16+B6FZ	SCREW	
B140	XQN16+B2FN	SCREW	
W101	XUC2FP	WASHER	

14.3. LCD SECTION PARTS LIST

Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark △ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
201	L5BDDYM00002	LCD PANEL U.	
202	VEK8756	MONITOR BACKLIGHT U.	
205	VGL0938	POLARIZATION SHEET	
206	VGL0939	DIFFUSION SHEET	
207	VGQ4758	PROTECT SHEET (A)	
208	VGQ6324	PROTECT SHEET (B)	
209	VGQ6408	LCD BARRIER	
210	VKM5655	LCD CASE (LOWER)	
211	VGQ6215	HINGE COVER	
212	VXD0355	LCD HINGE (1) U.	
213	VXU1607	LCD LOCK BUTTON U.	
214	VGK2718	LCD ACCESSORY PIECE	
215	VYK0A88	LCD CASE (UPPER) (1) U.	
216	VYQ2238	LCD SHIELD CASE U.	
217	VYQ2239	C.B.A. FIXING PLATE U.	
B201	VHD1442	SCREW	
B202	VHD1442	SCREW	
B203	VHD1444	SCREW	
B204	VHD1444	SCREW	
B205	XQN16+B3FN	SCREW	
B206	XQN16+B3FN	SCREW	
B207	XQN16+BJ3FZ	SCREW	

14.4. CAMERA LENS SECTION

Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark △ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
301	VDL1110-A	CRYSTAL FILTER	
302	VEK9321	CCD U.	
304	VJB22319	CCD FLEX.	
305	VMX2758	CCD CUSHION	
306	VXW0517	LENS U.	
307	CNA1312K01VT	PHOTO SENSOR	
308	VXL3015	IRIS U.	
309	VEK0449	MR SENSOR U.	
310	VEK9079	LENS FLEX. U.	
311	VMA9961	SIDE YOKE	
312	VMS6812	GUIDE POLE	
313	VMS6812	GUIDE POLE	
314	VMX3055	ZOOM CONNECTOR BASE	
315	VXP2152	4TH MOVING FRAME U.	
316	VXP2064	2ND MOVING FRAME U.	
317	VXQ1037	MAIN FRAME U.	

Ref. No.	Part No.	Part Name & Description	Remarks
318	VXQ0968	3RD MOVING FRAME U.	
319	VXQ0969	MASTER FLANGE U.	
320	08S1E13F6NF	ZOOM MOTOR U.	
B301	XQN16+CJ4FY	SCREW	
B302	XQN16+CJ4FY	SCREW	
B303	XQN16+CJ4FY	SCREW	
B304	XQN16+BJ5	SCREW	
B305	XQN16+BJ5	SCREW	
B306	XQN16+BJ5	SCREW	
B307	XQN16+BJ5	SCREW	
B308	XQN16+BJ5	SCREW	
B309	XQN16+BJ8	SCREW	
B310	XQN16+BJ8	SCREW	
B311	XQN16+BJ8	SCREW	

14.5. PACKING PARTS & ACCESSORIES SECTION PARTS LIST

Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
401	VPG0L83	PACKING	NV-EX21EG
401	VPG0L84	PACKING	NV-EX21B
401	VPG0L85	PACKING	NV-EX21EN
401	VPG0L86	PACKING	NV-EX21A
402	VQT9431	OPERATING INSTRUCTIONS (GERMAN, ENGLISH)	⚠ NV-EX21EG
402	VQT9432	OPERATING INSTRUCTIONS (FRENCH, SPANISH)	⚠ NV-EX21EG
402	VQT9433	OPERATING INSTRUCTIONS (ITALIAN, DUTCH)	⚠ NV-EX21EG
402	VQT9434	OPERATING INSTRUCTIONS (SWEDISHÅj	⚠ NV-EX21EG
402	VQT9435	OPERATING INSTRUCTIONS (ENGLISH)	⚠ NV-EX21B
402	VQT9436	OPERATING INSTRUCTIONS (ENGLISH, CHINESE)	⚠ NV-EX21EN
402	VQT9437	OPERATING INSTRUCTIONS (RUSSIAN, ARABIC)	⚠ NV-EX21EN
402	VQT9438	OPERATING INSTRUCTIONS (ENGLISH, CHINESE)	⚠ NV-EX21A
403	VQT9439	OPERATING INSTRUCTIONS FOR PC KIT (CD-ROM)	⚠ NV-EX21EG
403	VQT9440	OPERATING INSTRUCTIONS FOR PC KIT (CD-ROM)	⚠ NV-EX21B
403	VQT9441	OPERATING INSTRUCTIONS FOR PC KIT (CD-ROM)	⚠ NV-EX21EN
403	VQT9442	OPERATING INSTRUCTIONS FOR PC KIT (CD-ROM)	⚠ NV-EX21A
404	VPN5589	CUSHION	
405	VPN5589	SPACER PAD	
406	VKF1451	HEAD CLEANIG CASSETTE	NV-EX21EN/A
407	K2KC4CB00002	AV CABLE	
408	VJA0664	AC CORD	⚠ K2CR2DA00004 NV-EX21EG/EN
408	VJA0665	AC CORD	⚠ K2CR2DA00002 NV-EX21A
409	K2GJ2DZ00012	DC CABLE	
410	VFF0120-S	CD-ROM FOR PC KIT	
411	VJA0940	AC CORD	⚠ K2CT3DA00003 NV-EX21B/EN
412	RP-SD008BVE0	SD CARD	
413	N2QAEC000003	REMOTE CONTROLLER	
414	VYP8269	HOOD CAP UNIT	
415	VFA0363	USB CONNECTION CABLE	
416	VYP8344	HOOD UNIT FOR STATIONARY PICTURE	

14.6. ELECTRICAL REPLACEMENT PARTS LIST

Note: 1. Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE: Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.
3. Unless otherwise specified,
All resistors are in OHMS. K=1,000 OHMS. All capacitors are in MICROFARADS (uf). P=uuF.
4. The P.C.Board units marked width "■" show below the main assembled parts.
5. The marking (RTL) indicaters the retention time is limited for this item.
After the discontinuation of this assembly in production, it will no longer be available.

Ref. No.	Part No.	Part Name & Description	Remarks
n	VEP03F97B	MAIN C.B.A.	(RTL)
n	VEP23538B	CAMERA C.B.A.	(RTL)
n	VEP23539B	DSC C.B.A.	(RTL)
n	VEP22319	CCD FLEX. CARD C.B.A.	(RTL)
n	VEP28289B	EVF C.B.A.	(RTL)
n	VEK9338	HALL SENSOR FLEX. CARD	(RTL)
n	VEP26261A	MONITOR C.B.A.	(RTL)
n	VEK9341	IR SENSOR C.B.A.	(RTL)
n	VEK9555	JACK FLEX. CARD	(RTL)
n	VEK9343	DSC MULTI UNIT	(RTL)
n	VEK9344	VTR MULTI UNIT	(RTL)
n	VEP22319	CCD FLEX. CARD C.B.A.	(RTL)
C294	ECST1VX225Z	T.CAPACITOR CH 35V 2.2U	
C295	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
D291	MA143	DIODE	
PP291	VJP4009C020	CONNECTOR (MALE) 20P	K1KA20A00170
Q291	2SC4627	TRANSISTOR	
R292	ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	
n	VEP28289B	EVF C.B.A.	(RTL)
C801	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C802	ECST0GY476Z	T.CAPACITOR CH 4V 47U	F3F0G476A009
C803	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	

Ref. No.	Part No.	Part Name & Description	Remarks
C804	ECST0JY226Z	T.CAPACITOR CH 6.3V 22U	F3F0J226A007
C805	ECUX1H560JCQ	C.CAPACITOR CH 50V 56P	
C806	ECUX1H560JCQ	C.CAPACITOR CH 50V 56P	
C807	ECUX1H560JCQ	C.CAPACITOR CH 50V 56P	
C808	ECUX0J105KBV	C.CAPACITOR CH 6.3V 1U	
C809	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C810	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C811	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C812	ECUX0J105KBV	C.CAPACITOR CH 6.3V 1U	
C813	ECUM0J225KBN	C.CAPACITOR CH 6.3V 2.2U	
C814	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C815	F1J0J475A006	CERAMIC CAPACITOR	
C816	ECUM1C225KBM	C.CAPACITOR CH 16V 2.2U	
C817	ECUX1E152KBQ	C.CAPACITOR CH 25V 1500P	
C818	ECUM1A225KBN	C.CAPACITOR CH 10V 2.2U	
C819	ECUM1A225KBN	C.CAPACITOR CH 10V 2.2U	
C820	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C821	ECUM1A225KBN	C.CAPACITOR CH 10V 2.2U	
C822	ECUX1C333KBQ	C.CAPACITOR CH 16V 0.033U	
C823	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C824	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	
C825	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C826	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
D801	1SS388	DIODE	B0JEEE000001
D802	1SS388	DIODE	B0JEEE000001
D803	MA111	DIODE	MA2J111
FP801	VJS3971B027	CONNECTOR (FEMALE) 27P	
FP902	K1MN16B00091	CONNECTOR	
IC801	AN2536NFHQ	IC	
L801	VLQ0911K100	COIL 10UH	G1C100K00019
L802	VLQ0911K100	COIL 10UH	G1C100K00019
L803	VLQ0807K100	COIL 10UH	G1C100K00024
L804	VLQ0911K100	COIL 10UH	G1C100K00019
Q801	HN1B04FUGRR	TRANSISTOR-TRANSISTOR	
Q802	B1ADGD000005	TRANSISTOR	
Q803	B1ADGD000005	TRANSISTOR	
Q805	B1ADGD000005	TRANSISTOR	
Q806	XP1501	TRANSISTOR-TRANSISTOR	
Q881	2SK2055	TRANSISTOR	
QR803	DTC124EH	DIGITAL TRANSISTOR	
R801	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	
R802	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R803	ERJ2RHD152	M.RESISTOR CH 1/16W 1.5K	
R804	ERJ2RHD222	M.RESISTOR CH 1/16W 2.2K	
R805	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R806	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R807	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R808	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R809	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R810	ERJ2GEJ471	M.RESISTOR CH 1/16W 470	
R811	ERJ2GEJ471	M.RESISTOR CH 1/16W 470	
R812	ERJ2GEJ471	M.RESISTOR CH 1/16W 470	
R813	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R814	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R815	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R816	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R817	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R818	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	
R819	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R820	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	

Ref. No.	Part No.	Part Name & Description	Remarks
R821	ERJ2GEJ123	M.RESISTOR CH 1/16W 12K	
R822	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	
R823	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	
R824	ERJ2RHD563	M.RESISTOR CH 1/16W 56K	
R825	ERJ2RHD563	M.RESISTOR CH 1/16W 56K	
R826	ERJ2RHD393	M.RESISTOR CH 1/16W 39K	
R827	ERJ2RHD223	M.RESISTOR CH 1/16W 22K	
R828	ERJ2RHD102	M.RESISTOR CH 1/16W 1K	
R829	ERJ2RHD223	M.RESISTOR CH 1/16W 22K	
R830	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	
R831	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	
R832	ERJ2RHD152	M.RESISTOR CH 1/16W 1.5K	
R833	ERJ2RHD152	M.RESISTOR CH 1/16W 1.5K	
R836	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	
R837	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	
R838	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	
R839	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	
n	VEK9338	HALL SENSOR FLEX. CARD	(RTL)
IC991	DN8797MS	HALL IC	
IC992	DN8797MS	HALL IC	
n	VEP26261A	MONITOR C.B.A.	(RTL)
C901	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C902	ECST0GY476Z	T.CAPACITOR CH 4V 47U	F3F0G476A009
C903	ECST0JY226Z	T.CAPACITOR CH 6.3V 22U	F3F0J226A007
C904	ECUX0J105KBV	C.CAPACITOR CH 6.3V 1U	
C905	F3H0G1060001	ELECTROLYTIC CAPACITOR	
C906	ECUM1C106VB	C.CAPACITOR CH 16V 10U	
C907	ECST0JY335Z	T.CAPACITOR CH 6.3V 3.3U	
C908	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	
C909	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	
C910	ECUX0J474KBV	C.CAPACITOR CH 6.3V 0.47U	
C911	ECUX0J474KBV	C.CAPACITOR CH 6.3V 0.47U	
C912	ECUX0J474KBV	C.CAPACITOR CH 6.3V 0.47U	
C913	ECUX0J474KBV	C.CAPACITOR CH 6.3V 0.47U	
C914	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C915	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C916	ECUX0J105KBV	C.CAPACITOR CH 6.3V 1U	
C917	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C918	ECUX1A473KBQ	C.CAPACITOR CH 10V 0.047U	
C919	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	
C920	ECUX0J105KBV	C.CAPACITOR CH 6.3V 1U	
C925	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A1050002
C927	ECUX1H560JCQ	C.CAPACITOR CH 50V 56P	
C928	ECUX1H560JCQ	C.CAPACITOR CH 50V 56P	
C929	ECUX1H560JCQ	C.CAPACITOR CH 50V 56P	
C930	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C931	ECUX1H390JCQ	C.CAPACITOR CH 50V 39P	
C932	ECUX1H221JCQ	C.CAPACITOR CH 50V 220P	
C933	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C934	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	
C935	ECUX1C682KBQ	C.CAPACITOR CH 16V 6800P	
C936	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C937	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C938	ECUX1H101JCQ	C.CAPACITOR CH 50V 100P	
C939	ECUX1H331GCV	C.CAPACITOR CH 50V 330P	
C940	ECUX1H560JCQ	C.CAPACITOR CH 50V 56P	
C941	ECUX1H100CCQ	C.CAPACITOR CH 50V 10P	
C942	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A1050002
C943	ECUX1A224KBV	C.CAPACITOR CH 10V 0.22U	
C944	ECUX1A224KBV	C.CAPACITOR CH 10V 0.22U	
C945	ECUX1E332KBQ	C.CAPACITOR CH 25V 3300P	
C946	ECUM1C106VB	C.CAPACITOR CH 16V 10U	
C947	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C948	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	

Ref. No.	Part No.	Part Name & Description	Remarks
C950	ECUM1C106VB	C.CAPACITOR CH 16V 10U	
C951	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C952	ECUX1C103KBQ	C.CAPACITOR CH 16V 0.01U	
D901	MA338	DIODE	MA2X338
D902	MA6S121	DIODE	MA6Z121
D903	MA132WA	DIODE	MA3S132 D
D904	MA159A	DIODE	MA4X159 A
D905	1SS388	DIODE	B0JEEE0 00001
D906	1SS388	DIODE	B0JEEE0 00001
D907	MA111	DIODE	MA2J111
FP901	VJS4194B026	CONNECTOR (FEMALE) 26P	
FP903	VJS3971B017	CONNECTOR (FEMALE) 17P	
FP904	VJS3971B017	CONNECTOR (FEMALE) 17P	
FP905	VJS4297B006	CONNECTOR (FEMALE) 6P	K1MN06B 00057
IC901	LV4131W	IC	C0HBA00 00056
IC905	SN74LV04APW	IC	C0JBAB0 00247
L901	VLQ0807K100	COIL 10UH	G1C100K 00024
L902	VLQ0807K100	COIL 10UH	G1C100K 00024
L903	VLQ0807K100	COIL 10UH	G1C100K 00024
L904	VLQ0807K100	COIL 10UH	G1C100K 00024
L905	VLQ0807K100	COIL 10UH	G1C100K 00024
L907	VLQ0426J3R3	COIL 3.3UH	G1C3R3J 00009
Q901	2SD2216	TRANSISTOR	
Q902	2SK2159	TRANSISTOR	
Q903	HN1B04FUGRR	TRANSISTOR-TRANSISTOR	
Q904	XP1501	TRANSISTOR-TRANSISTOR	
Q905	B1ADGD000005	TRANSISTOR	
Q906	B1ADGD000005	TRANSISTOR	
Q907	2SD2216	TRANSISTOR	
Q908	B1ADGD000005	TRANSISTOR	
QR901	UN9210	TRANSISTOR-RESISTOR	
QR902	UN9210	TRANSISTOR-RESISTOR	
QR903	UN9214J	TRANSISTOR-RESISTOR	
QR904	UN9212	TRANSISTOR-RESISTOR	
QR905	XP4314	TRANSISTOR	
R901	ERJ2GEJ122	M.RESISTOR CH 1/16W 1.2K	
R902	ERJ2RHD152	M.RESISTOR CH 1/16W 1.5K	
R903	ERJ2RHD152	M.RESISTOR CH 1/16W 1.5K	
R904	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R905	ERJ2GEJ122	M.RESISTOR CH 1/16W 1.2K	
R906	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R907	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R908	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R910	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	
R911	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	
R912	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	
R913	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	
R914	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	
R918	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R919	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R920	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R923	ERJ2GEJ333	M.RESISTOR CH 1/16W 33K	
R924	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R926	ERJ2RHD223	M.RESISTOR CH 1/16W 22K	
R927	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	
R928	ERJ2RHD223	M.RESISTOR CH 1/16W 22K	

Ref. No.	Part No.	Part Name & Description	Remarks
R929	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	
R930	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R931	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R932	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R933	ERJ2GEJ333	M.RESISTOR CH 1/16W 33K	
R934	ERJ2GEJ474	M.RESISTOR CH 1/16W 470K	
R935	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	
R936	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	
R937	ERJ2GEJ182	M.RESISTOR CH 1/16W 1.8K	
R938	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	
R940	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	
R941	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R942	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R943	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R944	ERJ2GEJ152	M.RESISTOR CH 1/16W 1.5K	
R945	ERJ2RHD683	M.RESISTOR CH 1/16W 68K	
R946	ERJ2RHD563	M.RESISTOR CH 1/16W 56K	
R947	ERJ2RHD393	M.RESISTOR CH 1/16W 39K	
R948	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	
R949	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	
R950	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	
R951	ERJ2GEJ560	M.RESISTOR CH 1/16W 56	
R952	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	
R953	ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	
R954	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	
R955	ERJ3RBD333	M.RESISTOR CH 1/16W 33K	
R956	ERJ3RBD103	M.RESISTOR CH 1/16W 10K	
R957	ERJ3RBD101	M.RESISTOR CH 1/16W 100	
R958	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	
R959	ERJ2GEJ272	M.RESISTOR CH 1/16W 2.7K	
R960	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	
R961	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	
R962	ERJ2GEJ561	M.RESISTOR CH 1/16W 560	
R963	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	
R964	ERJ2GEJ333	M.RESISTOR CH 1/16W 33K	
R965	ERJ2GEJ563	M.RESISTOR CH 1/16W 56K	
R966	ERJ2GEJ152	M.RESISTOR CH 1/16W 1.5K	
R967	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	
R968	ERJ2GEJ333	M.RESISTOR CH 1/16W 33K	
R969	ERJ2GEJ333	M.RESISTOR CH 1/16W 33K	
R970	ERJ2GEJ562	M.RESISTOR CH 1/16W 5.6K	
R971	ERJ3GEYJ335	M.RESISTOR CH 1/16W 3.3M	
R972	ERJ2GEJ224	M.RESISTOR CH 1/16W 220K	
R973	ERJ8GEYJ335	M.RESISTOR CH 1/8W 3.3M	
R974	ERJ8GEYJ335	M.RESISTOR CH 1/8W 3.3M	
R975	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	
R976	ERJ3RBD621	M.RESISTOR CH 1/16W 620	
R977	ERJ3RED180	M.RESISTOR CH 1/16W 18	
R978	ERJ6GEYJ335	M.RESISTOR CH 1/10W 3.3M	
R979	ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	
R980	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	
R981	ERJ2GEJ273	M.RESISTOR CH 1/16W 27K	
R982	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	
R983	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	
R985	ERJ2RHD132	M.RESISTOR CH 1/16W 1.3K	
R986	ERJ2RHD202	M.RESISTOR CH 1/16W 2K	
R989	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	
T901	ETJ09K49AZ	CHIP TRANSFORMER	
T902	EFTU21R203	TRANSFORMER	
n	VEK9341	IR SENSOR C.B.A.	(RTL)
D6150	PH310	DIODE	B3GA000 00001
n	VEK9555	JACK FLEX. CARD	(RTL)
C4950	ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	
C4951	ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	

MC-Service

Ref. No.	Part No.	Part Name & Description	Remarks
JK2951	VJJ0580	JACK (4P)	
JK3951	K2HZ104D0001	S-JACK	
JK3952	K2YZ04000016	JACK	
JK4950	VJJ0668	AV JACK (4-PIN)	K2HC106 B0005
LB3953	VLP0150	COIL	J0JCC00 00021
R3950	ERJ6GEY0R00V	M.RESISTOR CH 1/10W 0	D0GBR00 JA017
R3951	ERJ6GEY0R00V	M.RESISTOR CH 1/10W 0	D0GBR00 JA017
R3952	ERJ6GEY0R00V	M.RESISTOR CH 1/10W 0	D0GBR00 JA017
R3953	ERJ6GEY0R00V	M.RESISTOR CH 1/10W 0	D0GBR00 JA017
R4950	ERJ6GEY0R00V	M.RESISTOR CH 1/10W 0	D0GBR00 JA017
R4951	ERJ6GEY0R00V	M.RESISTOR CH 1/10W 0	D0GBR00 JA017
VZ6551	VRT0158	TRANSIENT/SURGE ABSORBER	D4ED127 10002
VZ6552	VRT0158	TRANSIENT/SURGE ABSORBER	D4ED127 10002

15 ADJUSTMENT PROCEDURES:BATTERY ADAPTOR (VSK0605)

15.1. DISASSEMBLE FLOW CHART

This flow chart indicates the disassembly steps the cabinet parts, C.B.A. and Mecha. Unit in order to access to be serviced. When reinstalling, perform the steps in the reverse order.

1	Battery Case (R) Unit
2	Battery Case (L) Unit
3	Flash Case Unit
4	Battery Adaptor C.B.A.

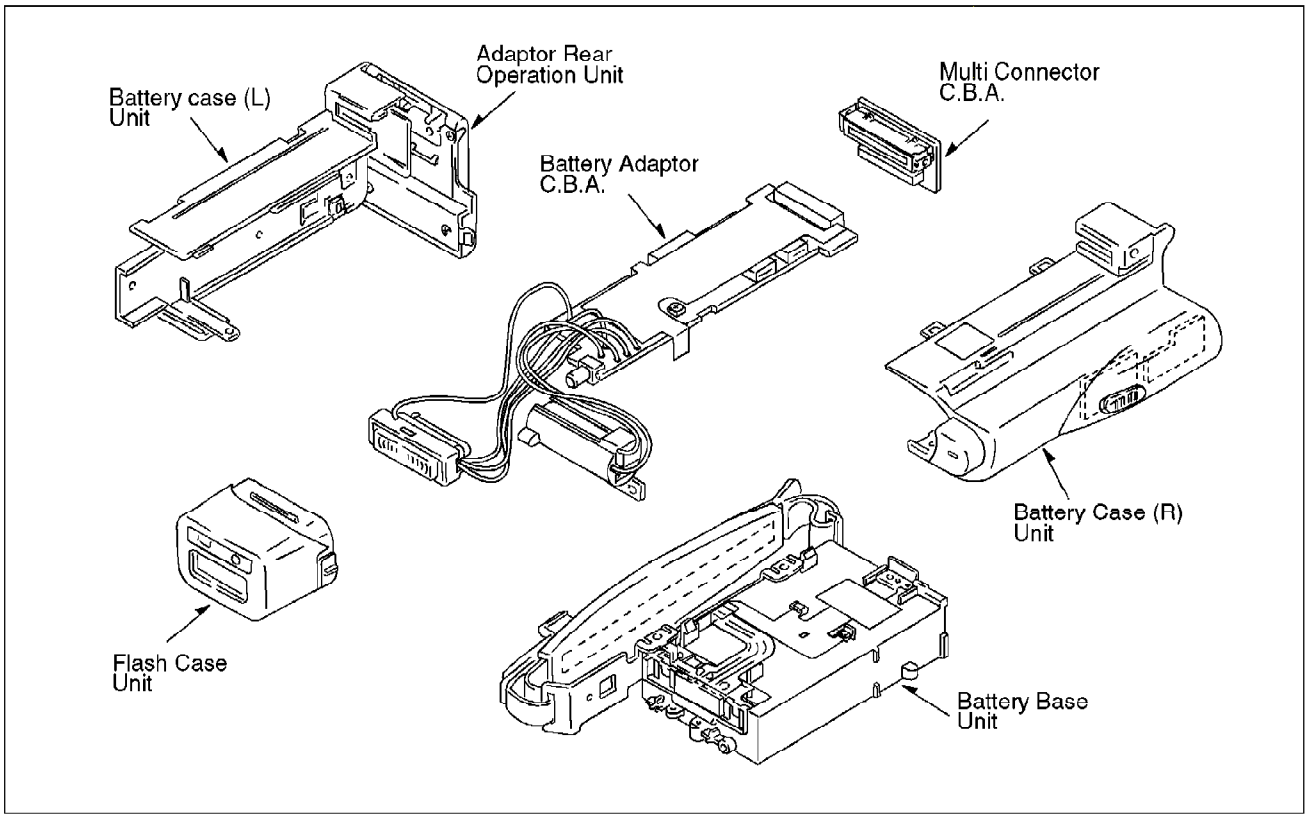


Fig. F1

15.2. DISASSEMBLY PROCEDURES

Flow-Chart for Disassembly Procedure

No.	Item/Part	Fig.	Removal (Screw & Other)
1	Battery Case (R) Unit	Fig. D1	1-Screw (A) 1-Screw (B)
		Fig. D2	1-Screw (C)
		Fig. D3	Open Rear Door 1-Screw (D)
		Fig. D4	1-Connector FP1502 2-Tabs Remove the Battery Case (R) Unit
2	Battery Case (L) Unit	Fig. D5	1-Screw (E) 3-Screws (F)
		Fig. D6	1-Connector FP1503
		Fig. D7	Remove the Battery Case (L) Unit/Adaptor Rear Operation Unit
		Fig. D8	1-Screw (G) Remove the Battery Case (L) Unit
3	Flash Case Unit	Fig. D9	1-Screw (H)
		Fig. D10	4-Tabs Remove the Flash Case Unit
4	Battery Adaptor C.B.A.	Fig. D11	1-Screw (I)
		Fig. D12	1-Connector FP1501 Remove the Capacitor Holder Discharge the Capacitor (C7004) 2-Tabs Remove the Battery Adaptor C.B.A.

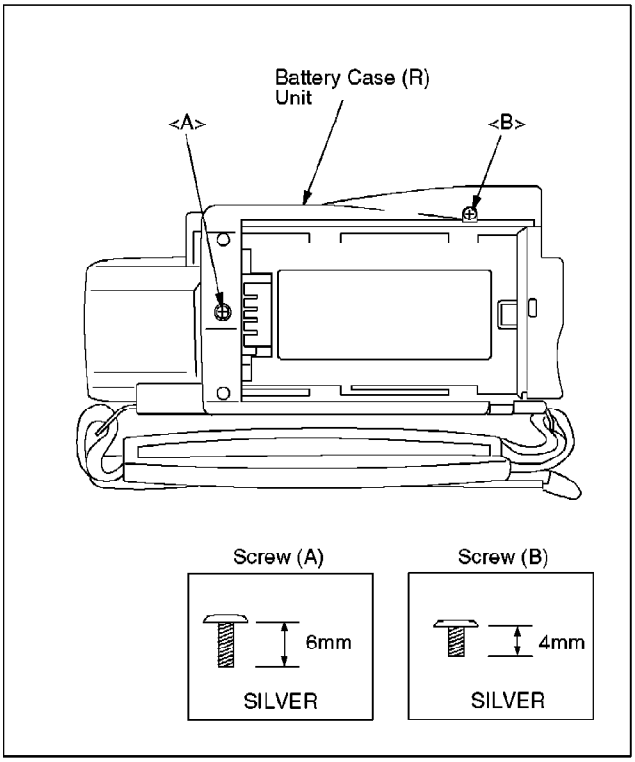


Fig. D1

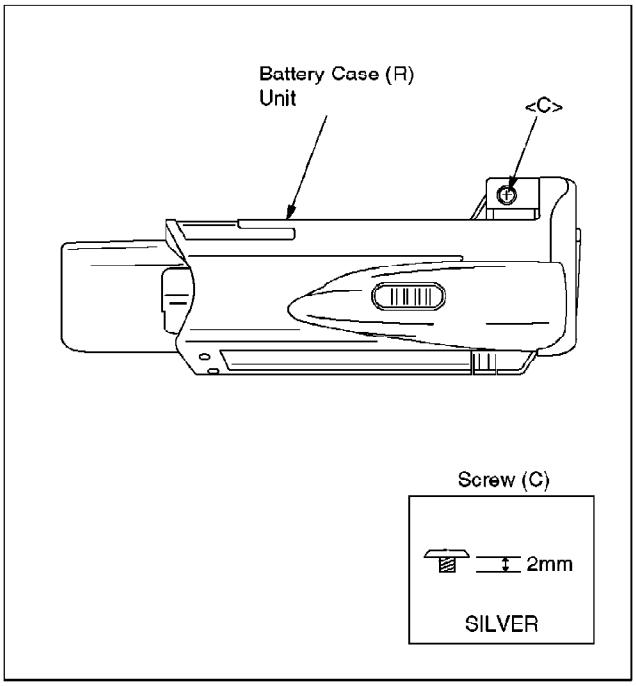


Fig. D2

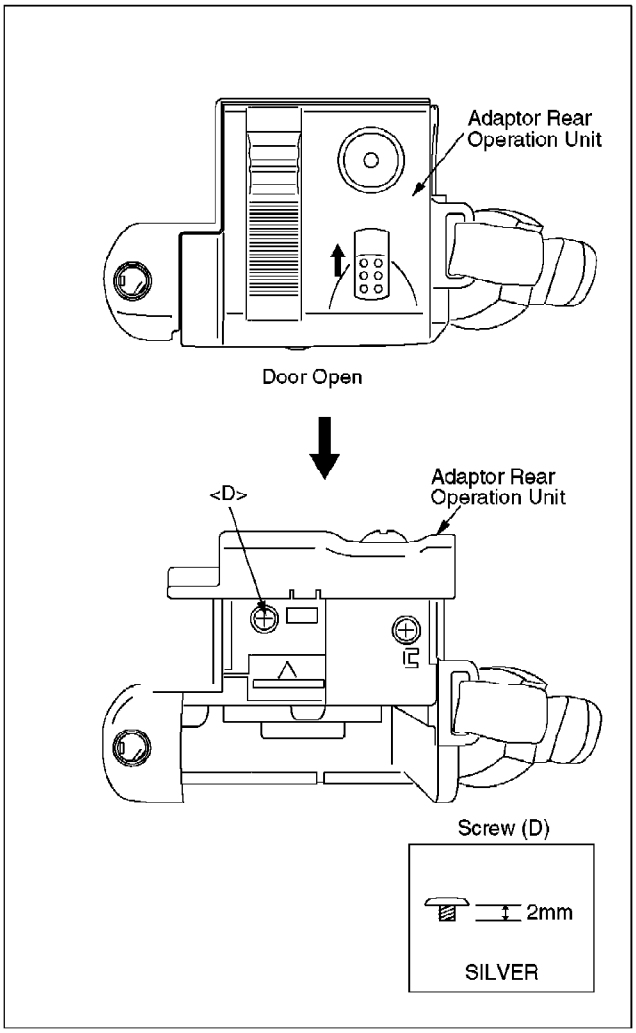


Fig. D3

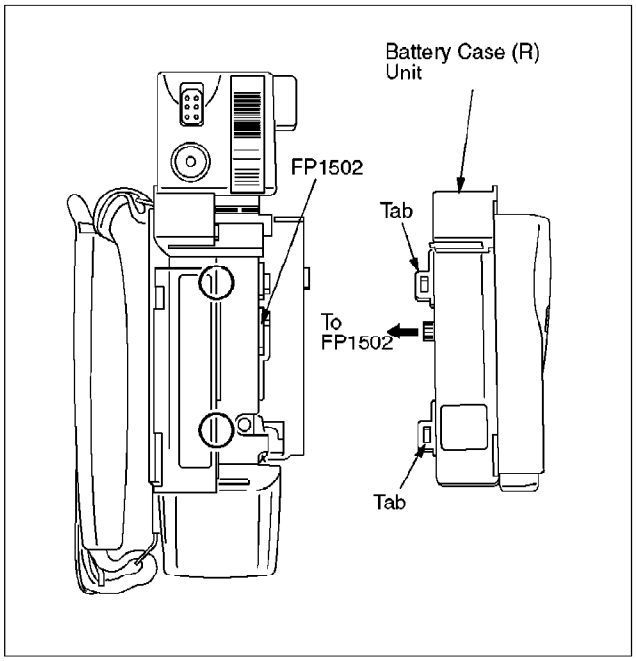


Fig. D4

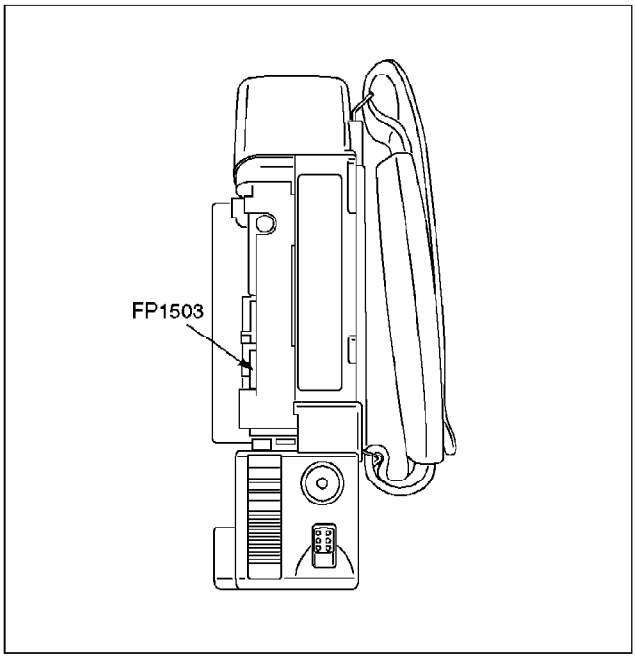


Fig. D6

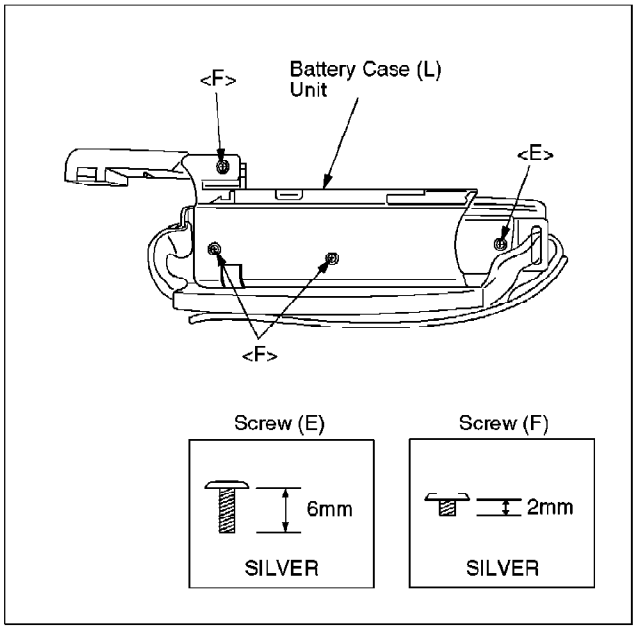


Fig. D5

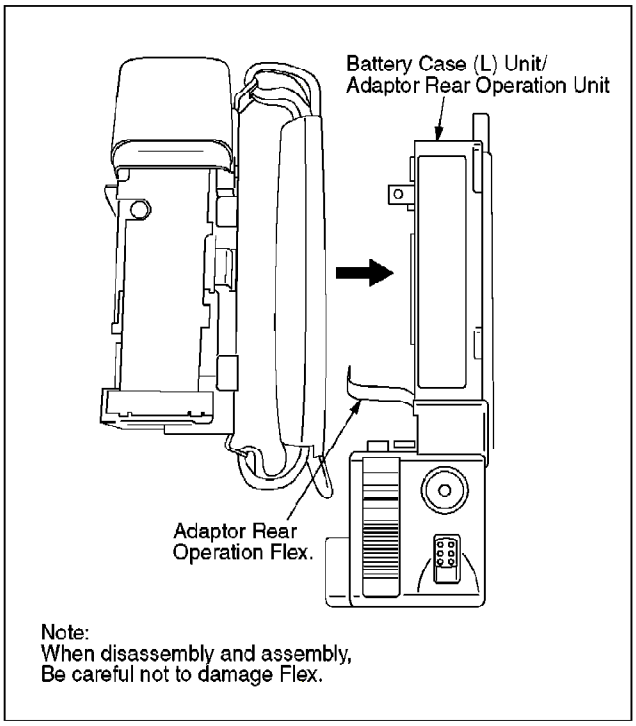


Fig. D7

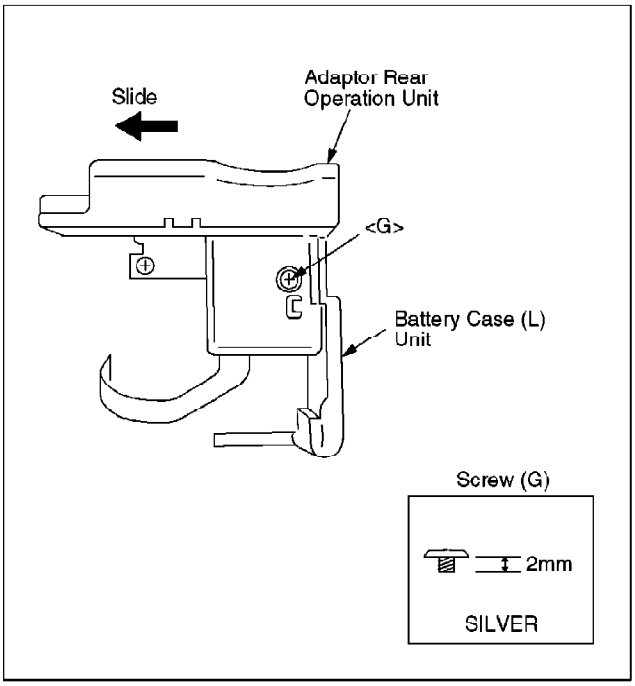


Fig. D8

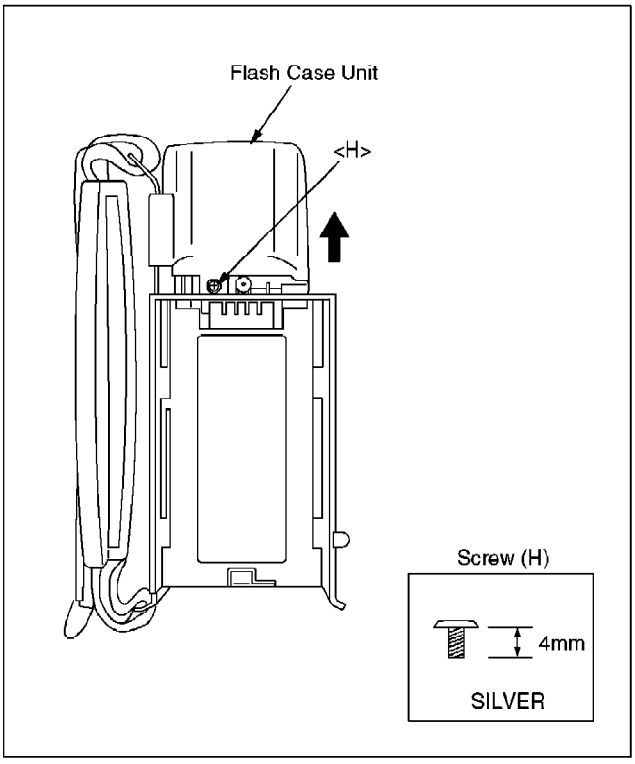


Fig. D9

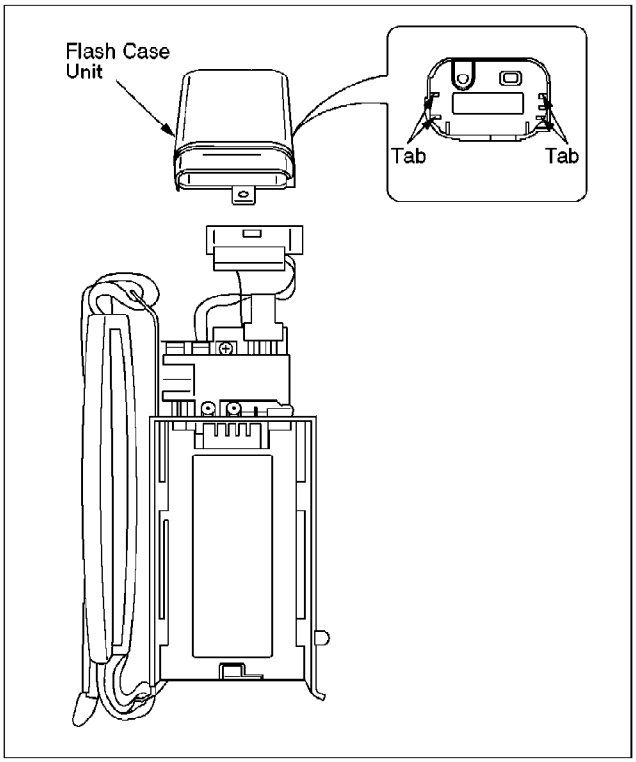


Fig. D10

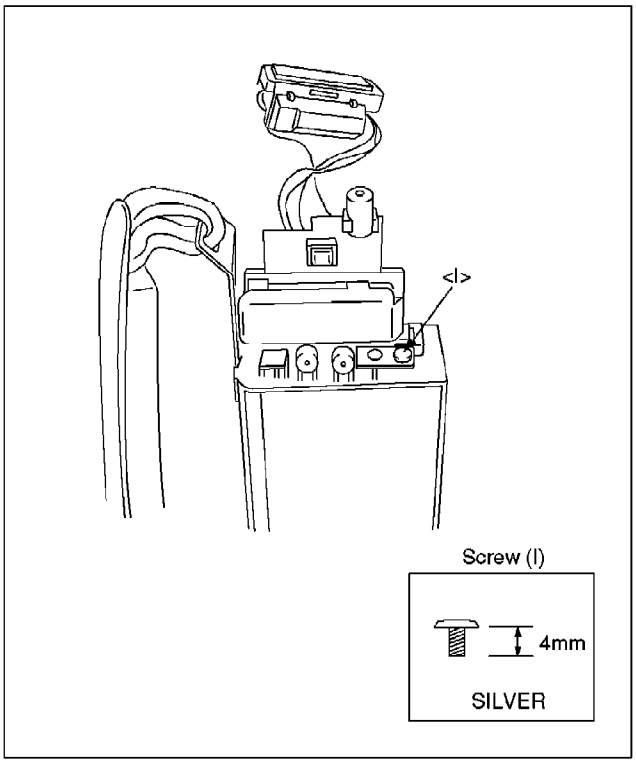
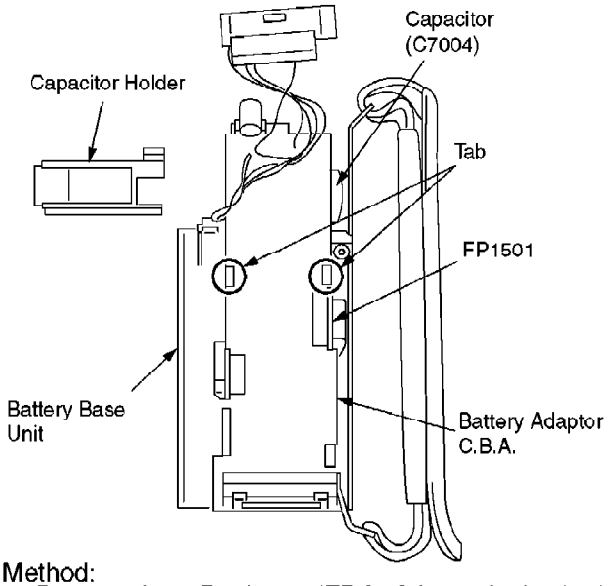


Fig. D11

CAUTION
Be sure to discharge the capacitor on Battery Adaptor C.B.A. before disassembling.
CAUTION
Be careful of the high voltage circuit on Battery Adaptor C.B.A. when servicing.



Method:
1.Prepare the 2 Resistors (ERG2SJ102:1k ohm/2w) for discharge.
Note:
Above 2 Resistors may be substituted with equivalent type.
2.Discharge Capacitor (C7004).

Fig. D12

MC-Service

15.3. ELECTRICAL ADJUSTMENT

15.3.1. REPLACEMENT PARTS

When a following parts are replaced, electrical adjustment must be done.

1. Battery adaptor C.B.A.
2. Back light
3. VR7001

15.3.2. PREPARATION

1. Camera block for NV-EX21
   *To do electrical adjustment on the this battery adaptor is needed the Camera block for NV-EX21.
2. Extension cable between camera and battery adaptor (VFK1704)
3. AC adaptor
4. Oscilloscope
5. AV cable
6. Grayed reflection sheet (VFK3525)
7. Battery adaptor

15.3.3. ADJUSTMENT PROCEDURE

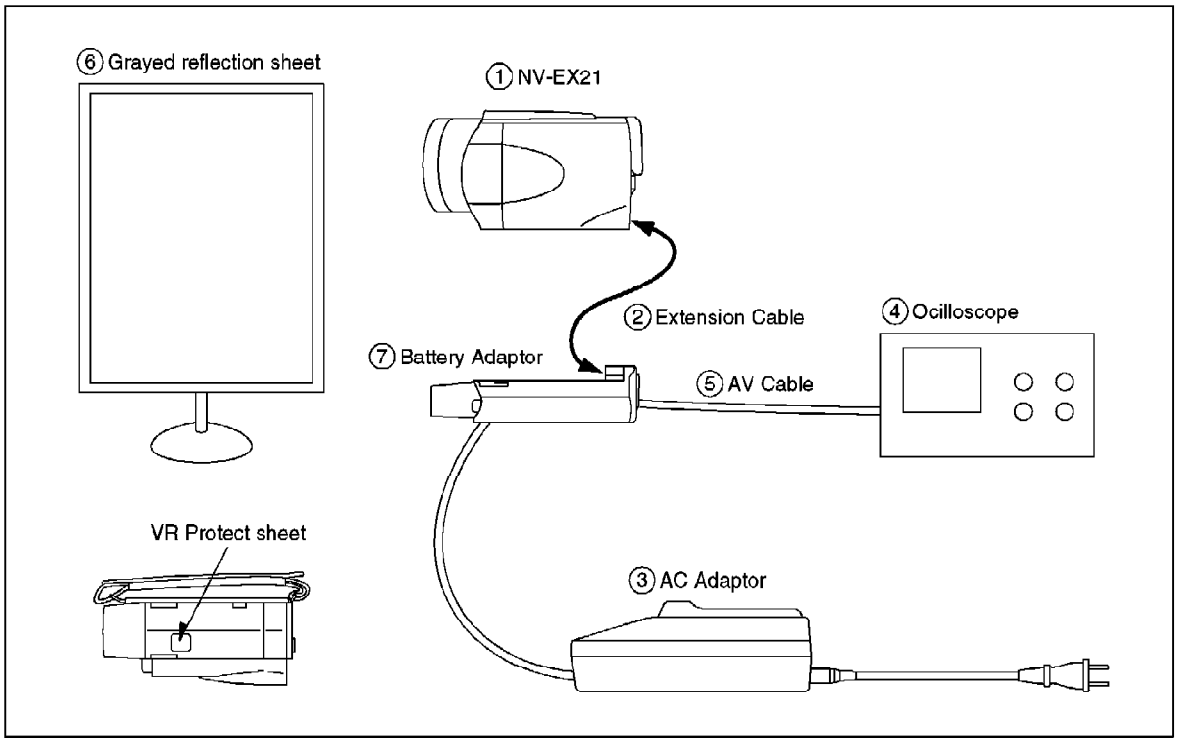


Fig. E1

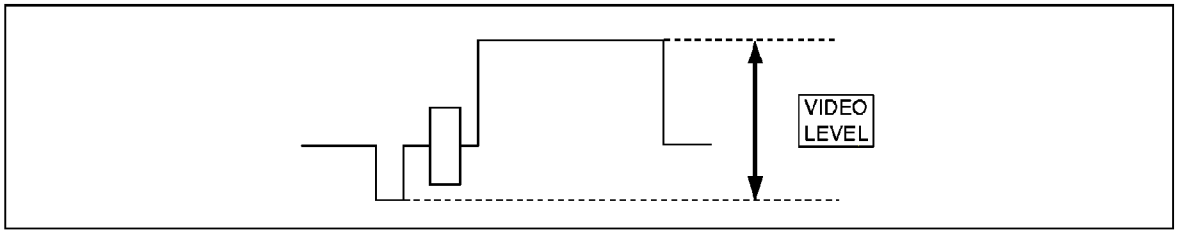


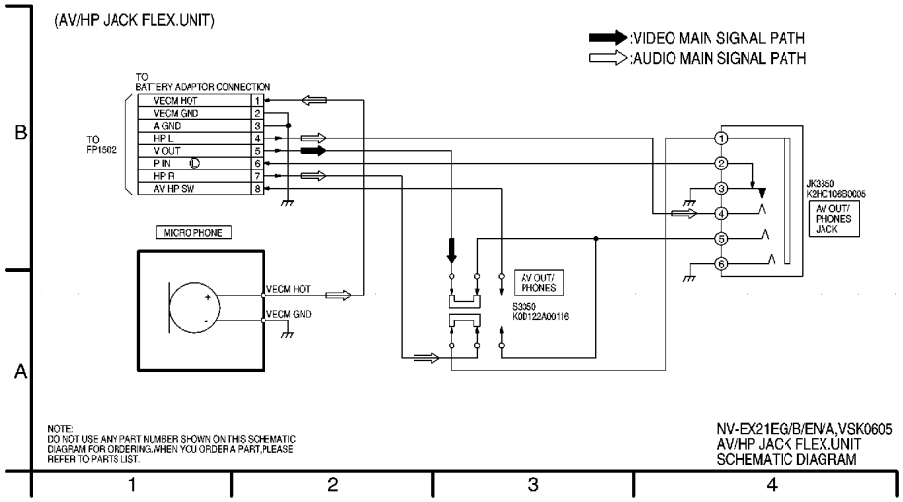
Fig. E2

1. Put the grayed reflection sheet on the wall.
2. Take out VR cover from the battery adaptor to be visible VR7001.
   *Be careful not to make scratch on the battery adaptor.

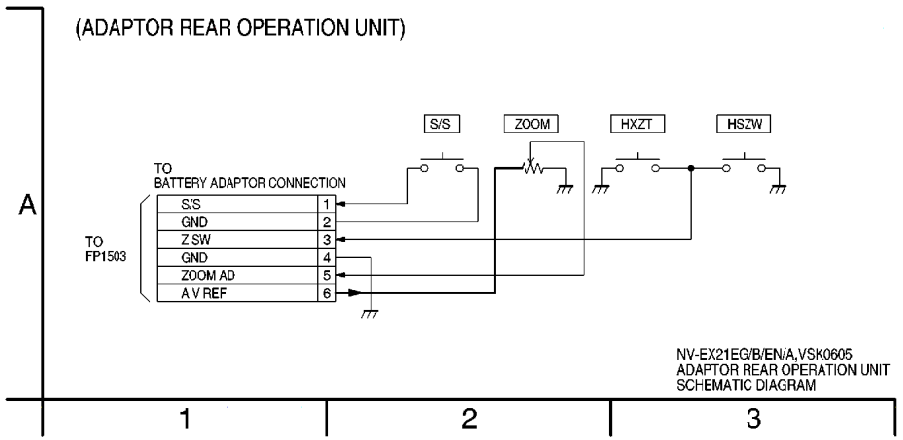
3. Connect extention cable between the camera for NV-EX21 and the battery adaptor.
4. Turn power on the camera for NV-EX21 and set below function in the MENU.
   FLASH: ON (MENU => RECORDING SET UP => FLASH : ON)
   RED EYE REDUCTION : OFF (MENU => RECORDING SET UP => RED EYE REDUCTION : OFF)
5. Set 100cm between the grayed reflection sheet and camera.
6. Shoot it until full screen on the monitor LCD by zooming.
7. Press still button to take still picture. After flash, Picture must be stopped.
8. Connect AV cable to AV OUT/PHONES terminal and confirm the shot VIDEO level on the ocilloscope.
9. It should be "1.5 +- 0.1 V" as Fig. E2 .
10. If not, adjust VR7001 and repeat procedure 7-9 again until 1.5 +- 0.1 V.

16 SCHEMATIC DIAGRAMS:BATTERY ADAPTOR (VSK0605)

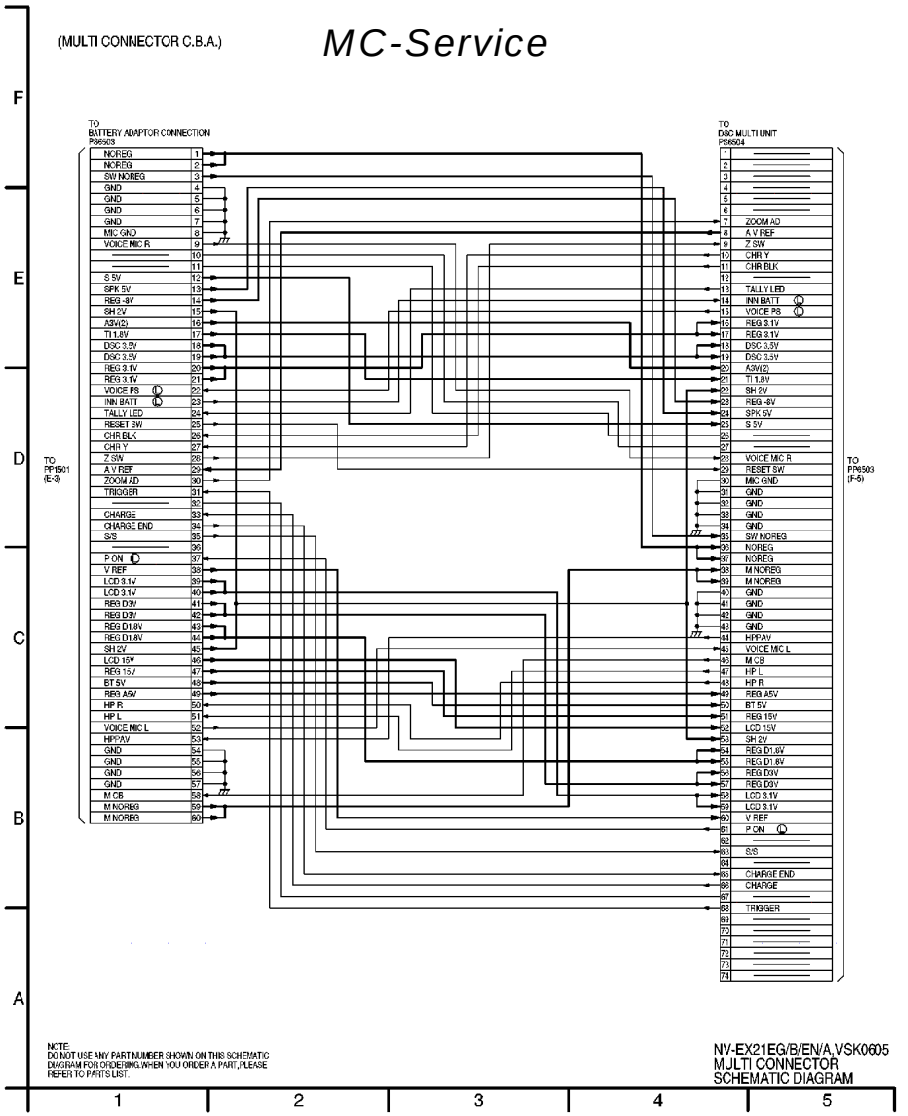
16.1. AV/HP JACK FLEX. UNIT SCHEMATIC DIAGRAM



16.2. ADAPTOR REAR OPERATION UNIT SCHEMATIC DIAGRAM

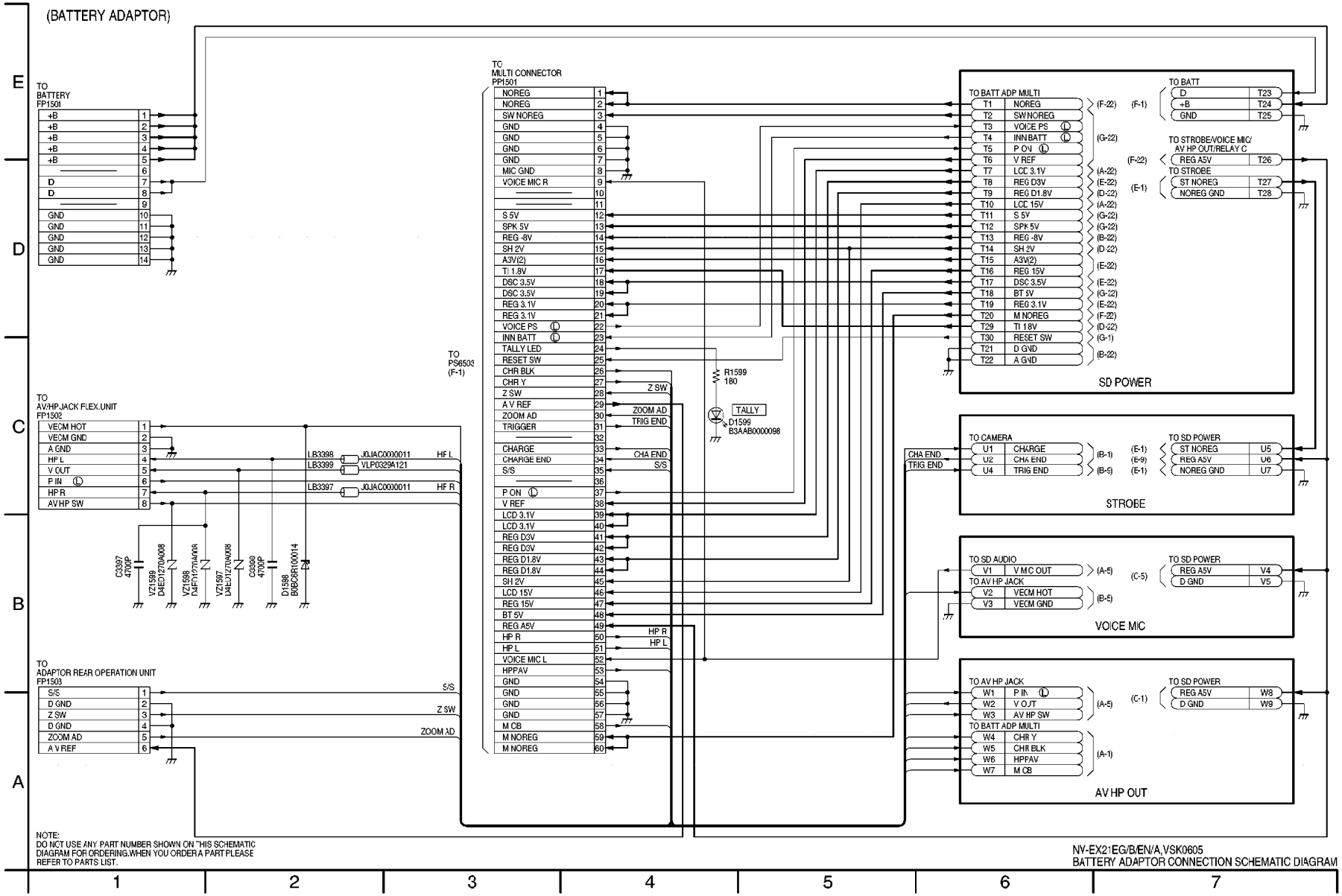


16.3. MULTI CONNECTOR SCHEMATIC DIAGRAM


(MULTI CONNECTOR C.B.A.)
MC-Service
TO BATTERY ADAPTOR CONNECTION P56903
TO DSC MULTI UNIT P56904
TO FP1501 (E-3)
TO FP1503 (F-5)
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.
NV-EX21EG/B/EN/A,VSK0605
MULTI CONNECTOR
SCHEMATIC DIAGRAM

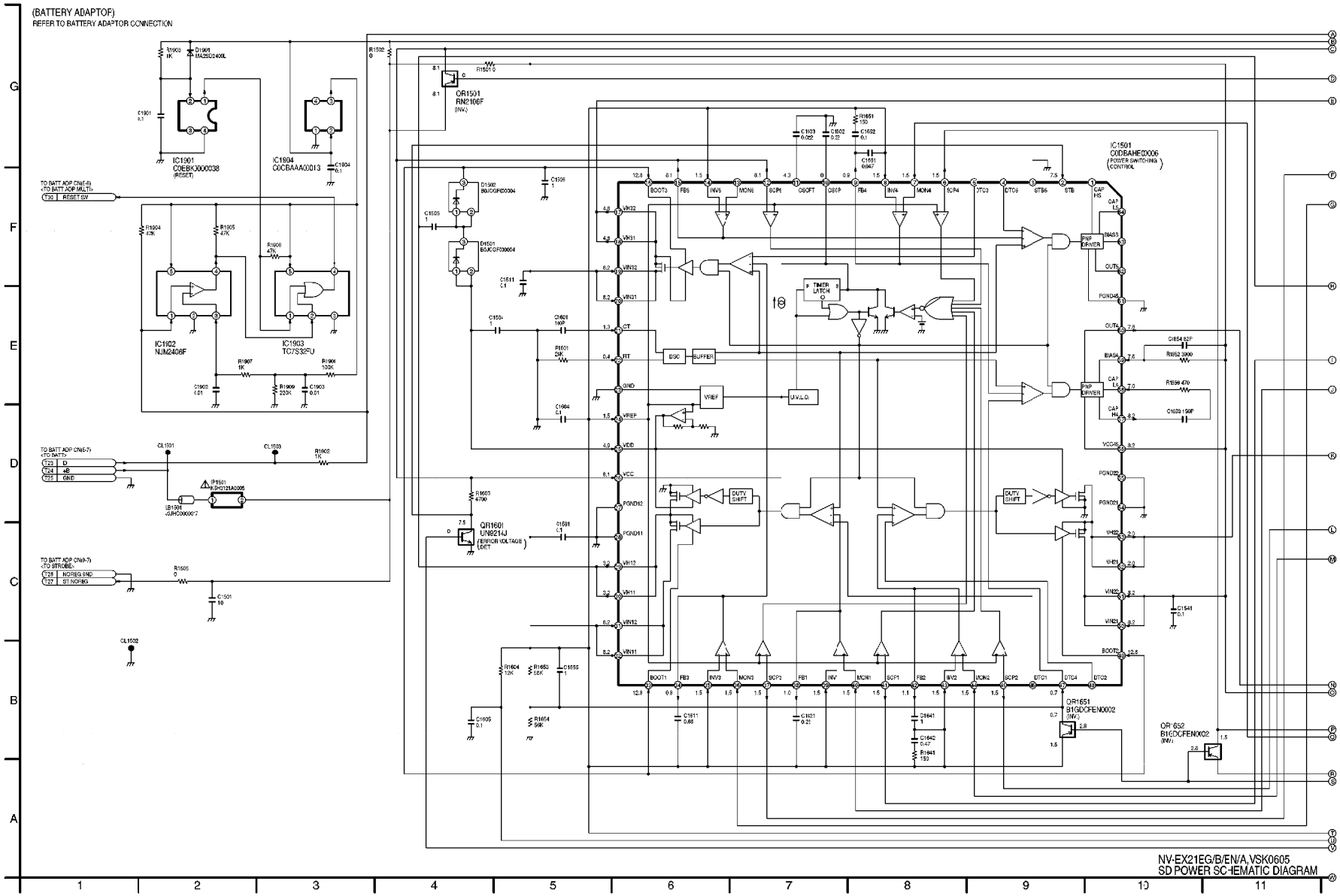
16.4. BATTERY ADAPTOR CONNECTION SCHEMATIC DIAGRAM

MC-Service

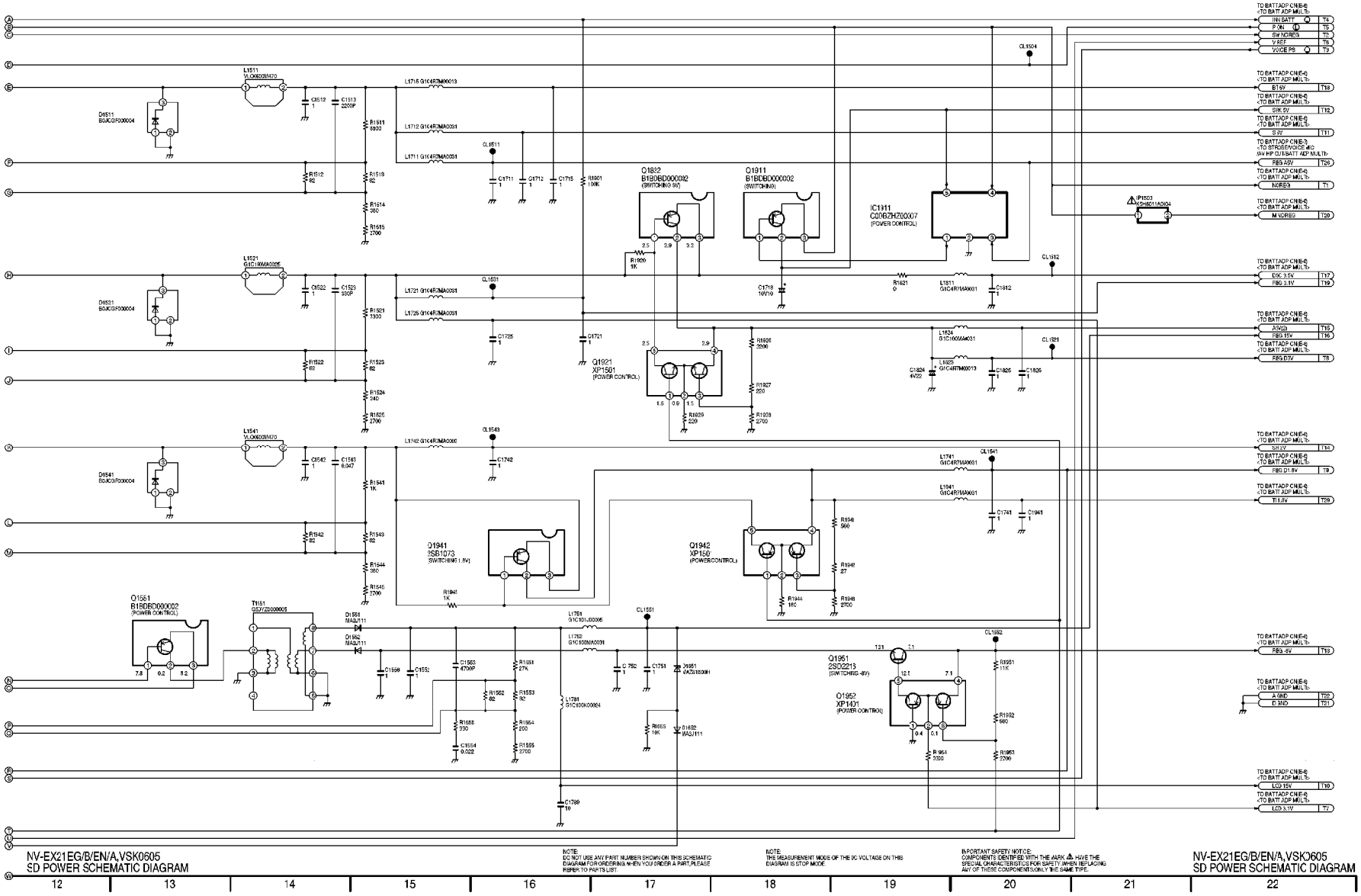


16.5. SD POWER SCHEMATIC DIAGRAM

MC-Service



MC-Service


NV-EX21EG/B/EN/A,VSK0605
SD POWER SCHEMATIC DIAGRAM
NOTE:
DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.
NOTE:
THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.WHEN REPLACING ANY OF THESE COMPONENTS,ONLY THE SAME TYPE.
NV-EX21EG/B/EN/A,VSK0605
SD POWER SCHEMATIC DIAGRAM
12
13
14
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19
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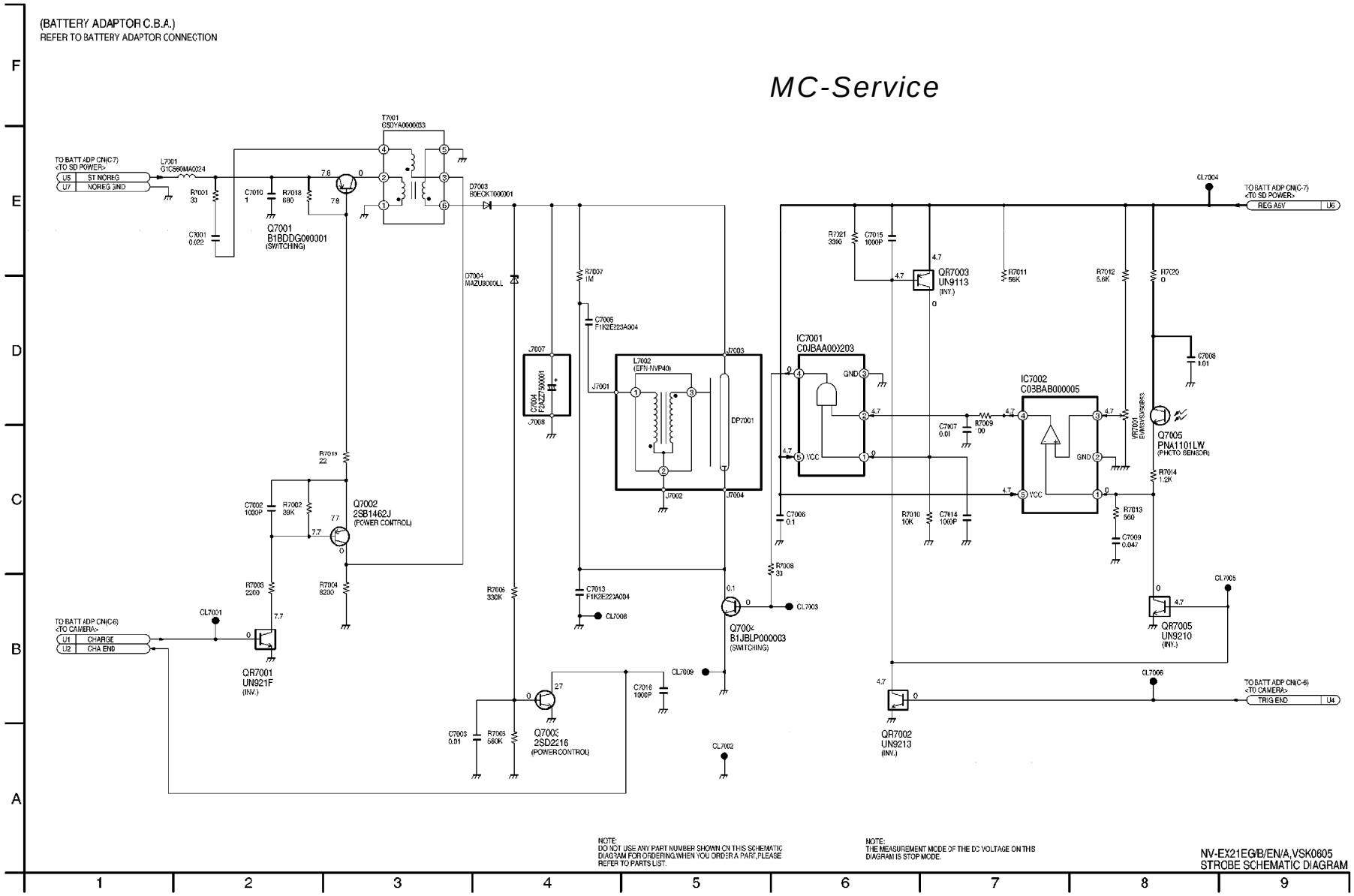
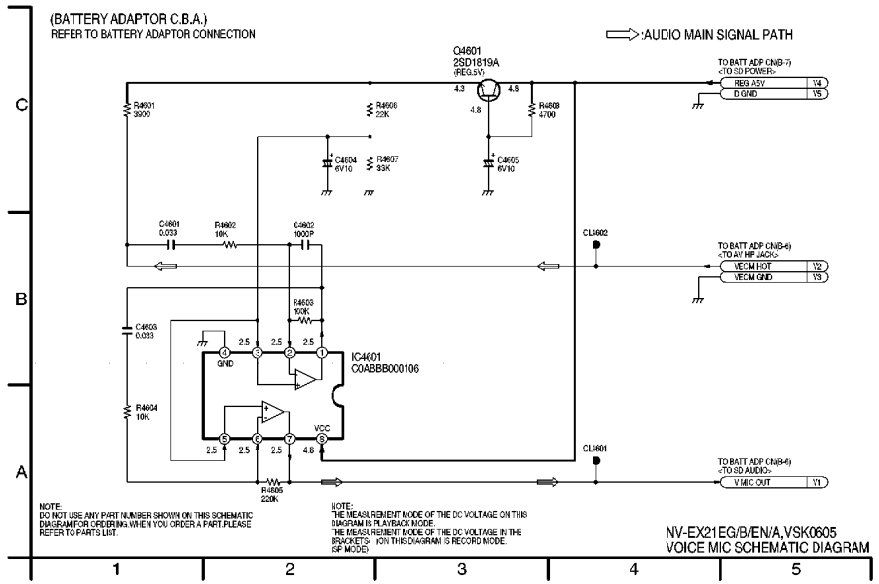
21
22

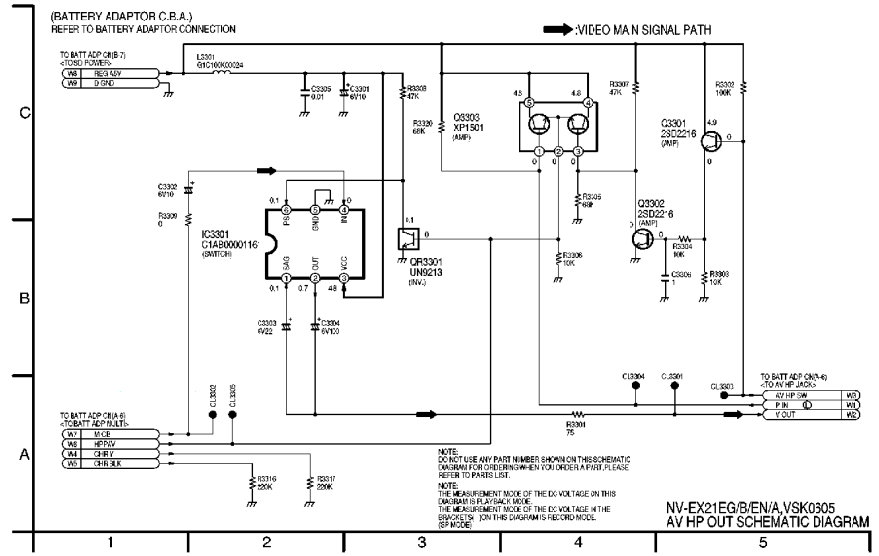
16.6. STROBE SCHEMATIC DIAGRAM



16.7. VOICE MIC SCHEMATIC DIAGRAM



16.8. AV HP OUT SCHEMATIC DIAGRAM



MC-Service

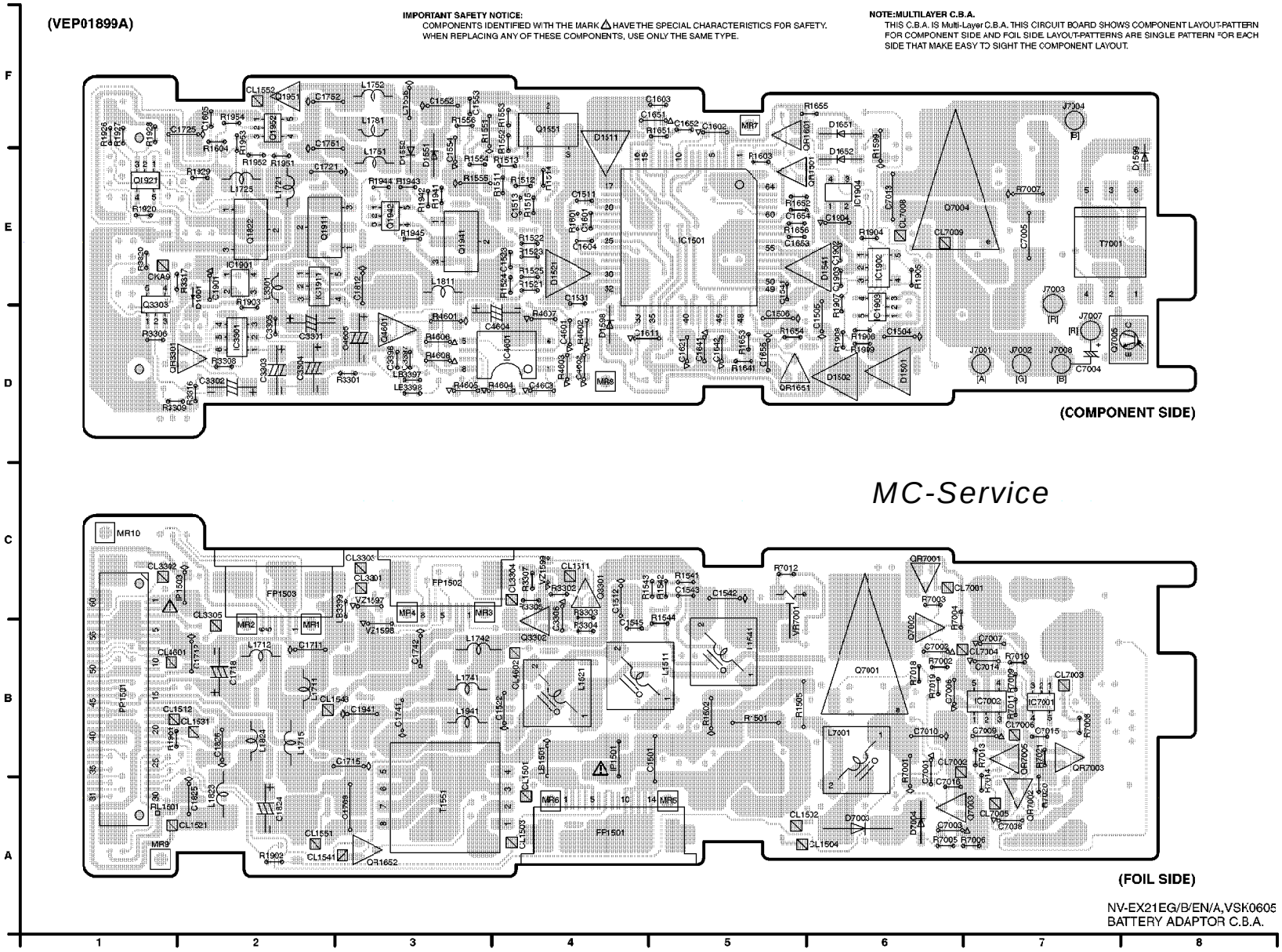
17 CIRCUIT BOARD ASSEMBLIES:BATTERY ADAPTOR (VSK0605)

17.1. BATTERY ADAPTOR C.B.A.

(VEP01899A)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK △ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE:MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A. THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.



MC-Service

NV-EX21EG/B/EN/A,VSK0605
BATTERY ADAPTOR C.B.A.

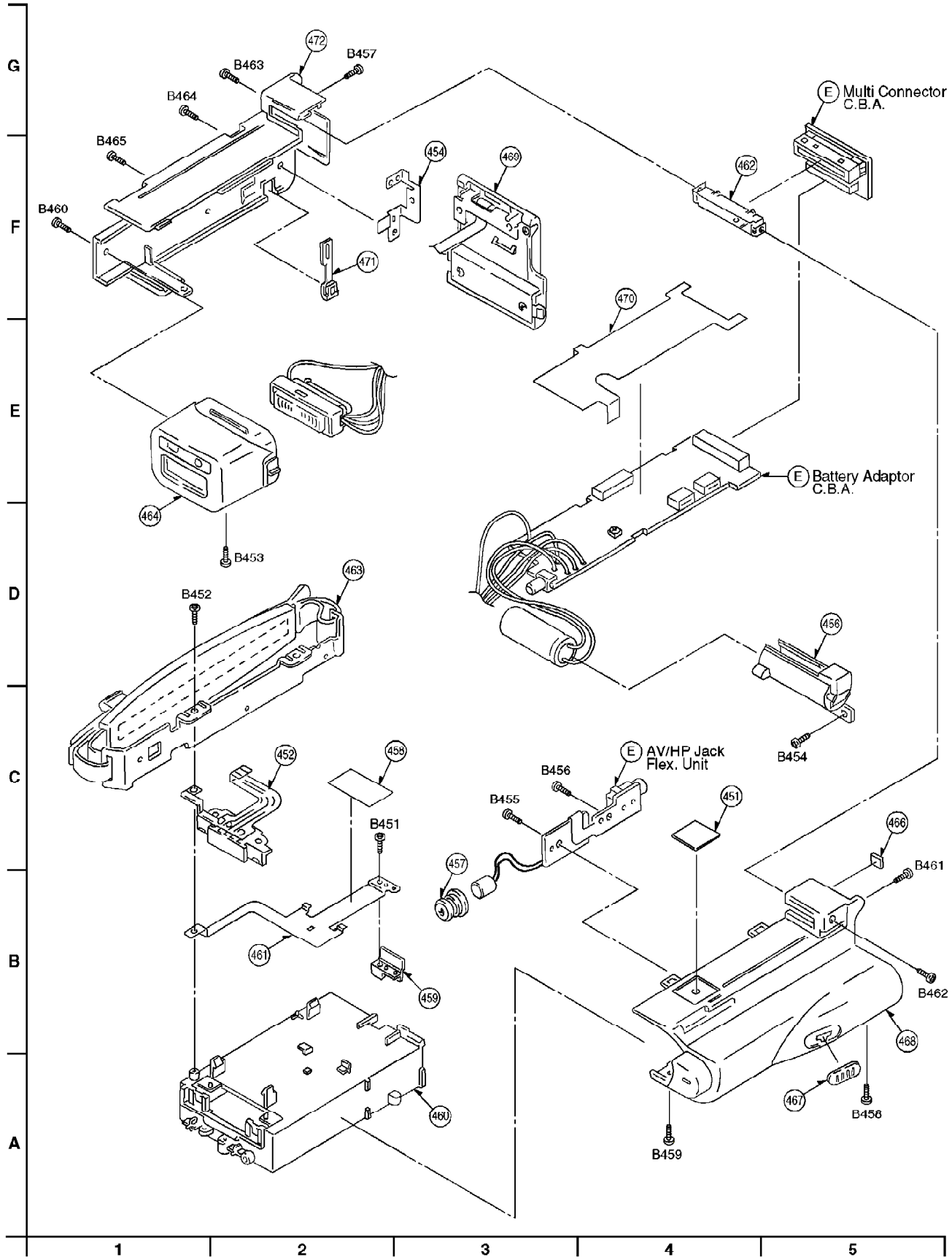
Battery Adaptor C.B.A.

Integrated Circuit	
IC1501	E-5
IC1901	E-2
IC1902	E-6
IC1903	D-6
IC1904	E-6
IC1911	E-2
IC3301	D-2
IC4601	D-4
IC7001	B-7
IC7002	B-7
Transistor	
Q1551	F-4
Q1822	E-2
Q1911	E-2
Q1921	E-1
Q1941	E-3
Q1942	E-3
Q1951	F-2
Q1952	F-2
Q3301	C-4
Q3302	B-4
Q3303	E-1
Q4601	D-3
Q7001	B-6
Q7002	B-6
Q7003	A-6
Q7004	E-6
Q7005	D-8
Transistor & Resistor	
QR1501	E-5
QR1601	F-5
QR1651	D-5
QR1652	A-3
QR3301	D-2
QR7001	C-6
QR7002	A-7
QR7003	B-7
QR7005	B-7
Test Point	
CL1501	A-4
CL1502	A-5
CL1503	A-4
CL1504	A-5
CL1511	C-4
CL1512	B-1
CL1521	A-1
CL1531	B-2
CL1541	A-3
CL1543	B-2
CL1551	A-2
CL1552	F-2
CL3301	C-3
CL3302	C-1
CL3303	C-3
CL3304	C-4
CL3305	B-2
CL4601	B-1
CL4602	B-4
CL7001	C-6
CL7002	B-7
CL7003	B-7
CL7004	B-7
CL7005	A-7
CL7006	B-7
CL7008	E-6
CL7009	E-6
RL1501	A-1
Connector	
FP1501	A-4
FP1502	C-3
FP1503	C-2
PP1501	B-1
Fuse	
IP1501	B-4
IP1503	C-2
Diode	
D1501	D-6
D1502	D-6
D1511	E-4
D1521	E-4
D1541	E-6
D1551	E-3
D1552	E-3
D1598	D-4
D1599	E-8
D1651	F-6
D1652	E-6
D1901	E-2
D7003	A-6
D7004	A-6
Absorber	
VZ1597	C-3
VZ1598	B-3
VZ1599	C-4
Adjustment	
VR7001	C-5
Transformer	
T1551	A-3
T7001	E-7
Coil	
L1511	B-4
L1521	B-4
L1541	B-5
L1711	B-2
L1712	B-2
L1715	B-2
L1721	E-2
L1725	E-2
L1741	B-3
L1742	B-3
L1751	E-3
L1752	F-3
L1781	F-3
L1811	E-3
L1823	A-2
L1824	B-2
L1941	B-3
L3301	E-2
L7001	B-6
LB1501	B-4
LB3397	D-3
LB3398	D-3
LB3399	C-3
Capacitor	
C1501	B-5
C1504	D-6
C1505	D-6
C1506	D-5
C1511	E-4
C1512	C-4
C1513	E-4
C1522	B-4
C1523	E-4
C1531	E-4
C1541	E-5
C1542	C-5
C1543	C-5
C1552	F-3
C1553	F-3
C1554	E-3
C1556	F-3
C1601	E-4
C1602	F-5
C1603	F-5
C1604	E-4
C1605	F-2
C1611	D-5
C1621	D-5
C1641	D-5
C1642	D-5
C1651	F-5
C1652	F-5
C1653	E-5
C1654	E-5
C1655	D-5
C1711	B-2
C1712	B-2
C1715	B-3
C1718	B-2
C1721	E-2
C1725	F-2
C1741	B-3
C1742	B-3
C1751	F-2
C1752	F-2
C1789	A-3
C1812	E-3
C1824	A-2
C1825	A-2
C1826	B-2
C1901	E-2
C1902	E-6
C1903	E-6
C1904	E-6
C1941	B-3
C3301	D-2
C3302	D-2
C3303	D-2
C3304	D-2
C3305	D-2
C3306	B-4
C3397	D-3
C3398	D-3
C4601	D-4
C4602	D-4
C4603	D-4
C4604	D-4
C4605	D-3
C7001	B-6
C7002	B-6
C7003	A-6
C7005	E-7
C7006	B-6
C7007	B-7
C7008	A-7
C7009	B-7
C7010	B-6
C7013	E-6
C7014	B-7
C7015	B-7
C7016	A-6
Resistor	
R1501	B-5
R1502	B-5
R1505	B-5
R1511	E-4
R1512	E-4
R1513	E-4
R1514	E-4
R1515	E-4
R1521	E-4
R1522	E-4
R1523	E-4
R1524	E-4
R1525	E-4
R1541	C-5
R1542	C-5
R1543	C-5
R1544	B-5
R1545	B-4
R1551	F-4
R1552	F-4
R1553	F-4
R1554	E-3
R1555	E-3
R1556	F-3
R1599	F-6
R1601	E-4
R1603	E-5
R1604	F-2
R1641	D-5
R1651	F-5
R1652	E-5
R1653	D-5
R1654	D-5
R1655	F-6
R1656	E-5
R1901	B-2
R1902	A-2
R1903	D-2
R1904	E-6
R1905	E-6
R1906	D-6
R1907	E-6
R1908	D-6
R1909	D-6
R1920	E-1
R1926	F-1
R1927	F-1
R1928	F-1
R1929	E-2
R1941	E-3
R1942	E-3
R1943	E-3
R1944	E-3
R1945	E-3
R1951	E-2
R1952	E-2
R1953	F-2
R1954	F-2
R3301	D-3
R3302	C-4
R3303	B-4
R3304	B-4
R3305	C-4
R3306	D-1
R3307	C-4
R3308	D-2
R3309	D-1
R3316	D-2
R3317	E-2
R3320	E-1
R4601	D-3
R4602	D-4
R4603	D-4
R4604	D-4
R4605	D-3
R4606	D-3
R4607	D-4
R4608	D-3
R7001	B-6
R7002	B-6
R7003	C-6
R7004	B-7
R7005	A-6
R7006	A-7
R7007	E-7
R7008	B-7
R7009	B-7
R7010	B-7
R7011	B-7
R7012	C-5
R7013	B-7
R7014	A-7
R7018	B-6
R7019	B-6
R7020	A-7
R7021	B-7
Jumper	
J7001	D-7
J7002	D-7
J7003	E-7
J7004	F-7
J7007	D-7
J7008	D-7

ADDRESS INFORMATION

18 EXPLODED VIEWS:BATTERY ADAPTOR (VSK0605)

18.1. BATTERY ADAPTOR SECTION



19 REPLACEMENT PARTS LIST : BATTERY ADAPTOR (VSK0605)

19.1. BATTERY ADAPTOR SECTION PARTS LIST

Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark △ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
451	VGQ6340	VR PROTECT SHEET	
452	VEK9329	BATTERY CATCHER U.	
454	VSC5257	EARTH PLATE	
456	VGQ6238	CAPACITOR HOLDER	
457	VGQ6240	TALLY PANEL LIGHT	
458	VGQ6459	FLEX. BARRIER	
459	VGU8899	BATTERY LOCK PIECE	
460	VKM5666	BATTERY BASE	
461	VMC1726	BATTERY LOCK PLATE	
462	VMP6901	MULTI CONNECTOR FIXING ANGLE	
463	VYC0868	GRIP BELT U.	
464	VYK0A43	FLASH CASE U.	
466	VGQ6416	DOOR CUSHION	
467	VGU8900	HP SELECT KNOB	
468	VYK0A44	BATTERY CASE (R)	
469	N9ZZ00000111	ADAPTOR REAR OPERATION U.	
470	VGQ6454	C.B.A. BARRIER	
471	VKF3382	BLIND COVER	
472	VKM5663	BATTERY CASE (L)	
B451	XQN16+BJ3FZ	SCREW	
B452	XQN16+BJ4FN	SCREW	
B453	XQN16+BJ4FN	SCREW	
B454	XQN16+BJ4FN	SCREW	
B455	XQN16+BJ4FN	SCREW	
B456	XQN16+BJ4FN	SCREW	
B457	XQN16+B2FN	SCREW	
B458	XQN16+BJ4FN	SCREW	
B459	XQN16+BJ6FN	SCREW	
B460	XQN16+BJ6FN	SCREW	
B461	XQN16+B2FN	SCREW	
B462	XQN16+B2FN	SCREW	
B463	XQN16+B2FN	SCREW	
B464	XQN16+B2FN	SCREW	
B465	XQN16+B2FN	SCREW	

19.2. ELECTRICAL REPLACEMENT PARTS LIST

Note: 1. Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE: Components identified with the mark △ have the special characteristics for safety. When replacing any of these components, use only the same type.
3. Unless otherwise specified,
All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICROFARADS (uf), P=uuF.
4. The P.C. Board units marked width "■" show below the main assembled parts.
5. The marking (RTL) indicates the retention time is limited for this item.
After the discontinuation of this assembly in production, it will no longer be available.

Ref. No.	Part No.	Part Name & Description	Remarks
n	VEP01899A	BATTERY ADAPTOR C.B.A.	(RTL)
n	VEP000V0A	MULTI CONNECTOR C.B.A.	(RTL)
n	VEK9330	AV/HP JACK FLEX. CARD	(RTL)
n	VEP01899A	BATTERY ADAPTOR C.B.A.	(RTL)

Ref. No.	Part No.	Part Name & Description	Remarks
C1501	ECUM1C106VB	C.CAPACITOR CH 16V 10U	
C1504	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1505	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1506	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	
C1511	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C1512	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1513	ECUX1E222KBQ	C.CAPACITOR CH 25V 2200P	
C1522	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1523	ECUX1E331KBQ	C.CAPACITOR CH 25V 330P	
C1531	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C1541	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C1542	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1543	ECUX1A473KBQ	C.CAPACITOR CH 10V 0.047U	
C1552	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	
C1553	ECUX1E472KBQ	C.CAPACITOR CH 25V 4700P	
C1554	ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	F1H1E22 3A024
C1556	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	
C1601	ECUX1H101JCQ	C.CAPACITOR CH 50V 100P	
C1602	ECUX1A224KBV	C.CAPACITOR CH 10V 0.22U	
C1603	ECUX1C223KBQ	C.CAPACITOR CH 16V 0.022U	
C1604	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C1605	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C1611	ECUM0J684KBV	C.CAPACITOR CH 6.3V 0.68U	
C1621	ECUX1A224KBV	C.CAPACITOR CH 10V 0.22U	
C1641	ECUX0J105KBV	C.CAPACITOR CH 6.3V 1U	
C1642	ECUX0J474KBV	C.CAPACITOR CH 6.3V 0.47U	
C1651	ECUX1C473KBV	C.CAPACITOR CH 16V 0.047U	
C1652	ECUX1A104KBQ	C.CAPACITOR CH 10V 0.1U	
C1653	ECUX1H151JCQ	C.CAPACITOR CH 50V 150P	
C1654	ECUX1H820JCQ	C.CAPACITOR CH 50V 82P	
C1655	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1711	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1712	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1715	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1718	ECST1AY106Z	T.CAPACITOR CH 10V 10U	
C1721	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1725	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1741	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1742	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1751	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	
C1752	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	
C1789	ECUM1C106VB	C.CAPACITOR CH 16V 10U	
C1812	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1824	ECST0GY226Z	T.CAPACITOR CH 4V 22U	
C1825	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1826	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C1901	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C1902	ECUM1C103KBQ	C.CAPACITOR CH 16V 0.01U	
C1903	ECUM1C103KBQ	C.CAPACITOR CH 16V 0.01U	
C1904	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C1941	ECUM1A105KBN	C.CAPACITOR CH 10V 1U	F1J1A10 50002
C3301	ECST0JY106Z	T.CAPACITOR CH 6.3V 10U	

Ref. No.	Part No.	Part Name & Description	Remarks
C3302	ECST0JY106Z	T.CAPACITOR CH 6.3V 10U	
C3303	ECST0JY226Z	T.CAPACITOR CH 6.3V 22U	F3F0J226A007
C3304	ECST0JX107Z	T.CAPACITOR CH 6.3V 100U	
C3305	ECUM1C103KBQ	C.CAPACITOR CH 16V 0.01U	
C3306	ECUX0J105KBV	C.CAPACITOR CH 6.3V 1U	
C3397	ECUX1E472KBQ	C.CAPACITOR CH 25V 4700P	
C3398	ECUX1E472KBQ	C.CAPACITOR CH 25V 4700P	
C4601	ECUX1C333KBV	C.CAPACITOR CH 16V 0.033U	
C4602	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	
C4603	ECUX1C333KBV	C.CAPACITOR CH 16V 0.033U	
C4604	ECST0JY106Z	T.CAPACITOR CH 6.3V 10U	
C4605	ECST0JY106Z	T.CAPACITOR CH 6.3V 10U	
C7001	ECUX1E223KBV	C.CAPACITOR CH 25V 0.022U	F1H1E223A024
C7002	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	
C7003	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C7004	F2AZZ7500001	ELECTROLYTIC CAPACITOR	
C7005	F1K2E223A004	CERAMIC CAPACITOR	
C7006	ECUX1C104KBV	C.CAPACITOR CH 16V 0.1U	
C7007	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C7008	ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	
C7009	ECUX1C473KBV	C.CAPACITOR CH 16V 0.047U	
C7010	ECUM1C105KBP	C.CAPACITOR CH 16V 1U	
C7013	F1K2E223A004	CERAMIC CAPACITOR	
C7014	ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	
C7015	ECUX1E102KBQ	C.CAPACITOR CH 25V 1000P	
C7016	ECUX1E102KBQ	C.CAPACITOR CH 25V 1000P	
D1501	B0JCGF000004	DIODE	
D1502	B0JCGF000004	DIODE	
D1511	B0JCGF000004	DIODE	
D1521	B0JCGF000004	DIODE	
D1541	B0JCGF000004	DIODE	
D1551	MA111	DIODE	MA2J111
D1552	MA111	DIODE	MA2J111
D1598	02DZ6.2YTPH3	DIODE	B0BC6R100014
D1599	B3AAB0000098	LED	
D1651	MA8160H	DIODE	MAZ81600H
D1652	MA111	DIODE	MA2J111
D1901	MA2SD2400L	DIODE	
D7003	B0ECKT000001	DIODE	
D7004	MAZU3000LL	DIODE	
FP1501	VJS4273B014	CONNECTOR (FEMALE) 14P	
FP1502	VJS4273B008	CONNECTOR (FEMALE) 8P	
FP1503	VJS3320B006	CONNECTOR (FEMALE) 6P	
IC1501	BD9711KV	IC	C0DBAHE00006
IC1901	C0EBK0000038	IC	
IC1902	NJM2406F	IC	C0BBAA000007
IC1903	TC7S32FU	IC	
IC1904	C0CBAAA00013	IC	
IC1911	S816A50AMC	IC	C0DBZHZ00007
IC3301	C1AB00001161	IC	C1AB00001160
IC4601	NJM2115VA	IC	C0ABBB000106
IC7001	TC7S08FU	IC	C0JBAA000203
IC7002	TA75S393F	IC	C0BBAB000005
IP1501	K5H3121A0005	FUSE	⚠
IP1503	K5H8011A0004	FUSE	⚠
L1511	VLQ0900M470	COIL 47UH	
L1521	VLQ0900M150	COIL 15UH	G1C150MA0025
L1541	VLQ0900M470	COIL 47UH	

Ref. No.	Part No.	Part Name & Description	Remarks
L1711	G1C4R7MA0031	CHIP INDUCTOR	G1C4R7MA0030
L1712	G1C4R7MA0031	CHIP INDUCTOR	G1C4R7MA0030
L1715	VLQ0319M4R7	COIL 4.7UH	G1C4R7M00013
L1721	G1C4R7MA0031	CHIP INDUCTOR	G1C4R7MA0030
L1725	G1C4R7MA0031	CHIP INDUCTOR	G1C4R7MA0030
L1741	G1C4R7MA0031	CHIP INDUCTOR	G1C4R7MA0030
L1742	VLQ0779M4R7	COIL 4.7UH	G1C4R7MA0002
L1751	VLQ0426J101	COIL 100UH	G1C101J00005
L1752	G1C100MA0031	CHIP INDUCTOR	G1C100MA0030
L1781	VLQ0807K100	COIL 10UH	G1C100K00024
L1811	G1C4R7MA0031	CHIP INDUCTOR	G1C4R7MA0030
L1823	VLQ0319M4R7	COIL 4.7UH	G1C4R7M00013
L1824	G1C100MA0031	CHIP INDUCTOR	G1C100MA0030
L1941	G1C4R7MA0031	CHIP INDUCTOR	G1C4R7MA0030
L3301	VLQ0807K100	COIL 10UH	G1C100K00024
L7001	G1C560MA0024	COIL 56UH	
LB1501	VLP0332A420	CHIP BEAD	J0JHC0000017
LB3397	VLP0330A102	CHIP BEAD	J0JAC0000011
LB3398	VLP0330A102	CHIP BEAD	J0JAC0000011
LB3399	VLP0329A121	CHIP BEAD	
PP1501	VJP3884B060	CONNECTOR (MALE) 60P	
Q1551	2SB798A	TRANSISTOR	B1BDBD000002
Q1822	2SB798A	TRANSISTOR	B1BDBD000002
Q1911	2SB798A	TRANSISTOR	B1BDBD000002
Q1921	XP1501	TRANSISTOR-TRANSISTOR	
Q1941	2SB1073	TRANSISTOR	
Q1942	XP1501	TRANSISTOR-TRANSISTOR	
Q1951	2SD2216	TRANSISTOR	
Q1952	XP1401	TRANSISTOR-TRANSISTOR	
Q3301	2SD2216	TRANSISTOR	
Q3302	2SD2216	TRANSISTOR	
Q3303	XP1501	TRANSISTOR-TRANSISTOR	
Q4601	2SD1819A	TRANSISTOR	
Q7001	B1BDDG000001	TRANSISTOR	B1BDDG000005
Q7002	2SB1462J	TRANSISTOR	
Q7003	2SD2216	TRANSISTOR	
Q7004	B1JBLP000003	TRANSISTOR-RESISTOR	B1JBLP000002
Q7005	PNA1101LW	PHOTO TRANSISTOR	
QR1501	RN2106F	TRANSISTOR-RESISTOR	
QR1601	UN9214J	TRANSISTOR-RESISTOR	
QR1651	RN2105F	DIGITAL TRANSISTOR	B1GDCFEN0002
QR1652	RN2105F	DIGITAL TRANSISTOR	B1GDCFEN0002
QR3301	UN9213	TRANSISTOR-RESISTOR	
QR7001	UN921F	TRANSISTOR	
QR7002	UN9213	TRANSISTOR-RESISTOR	
QR7003	UN9113	TRANSISTOR-RESISTOR	
QR7005	UN9210	TRANSISTOR-RESISTOR	
R1501	ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	

MC-Service

Ref. No.	Part No.	Part Name & Description	Remarks
R1502	ERJ6GEY0R00V	M.RESISTOR CH 1/10W 0	D0GBR00 JA017
R1505	ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	
R1511	ERJ2RHD682	M.RESISTOR CH 1/16W 6.8K	
R1512	ERJ2RKD820	M.RESISTOR CH 1/16W 82	
R1513	ERJ2RKD820	M.RESISTOR CH 1/16W 82	
R1514	ERJ2RHD361	M.RESISTOR CH 1/16W 360	
R1515	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	
R1521	ERJ2RHD332	M.RESISTOR CH 1/16W 3.3K	
R1522	ERJ2RKD820	M.RESISTOR CH 1/16W 82	
R1523	ERJ2RKD820	M.RESISTOR CH 1/16W 82	
R1524	ERJ2RHD241	M.RESISTOR CH 1/16W 240	
R1525	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	
R1541	ERJ2RHD102	M.RESISTOR CH 1/16W 1K	
R1542	ERJ2RKD820	M.RESISTOR CH 1/16W 82	
R1543	ERJ2RKD820	M.RESISTOR CH 1/16W 82	
R1544	ERJ2RHD361	M.RESISTOR CH 1/16W 360	
R1545	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	
R1551	ERJ6RBB273	M.RESISTOR CH 1/10W 27K	
R1552	ERJ2RKD820	M.RESISTOR CH 1/16W 82	
R1553	ERJ2RKD820	M.RESISTOR CH 1/16W 82	
R1554	ERJ2RHD201	M.RESISTOR CH 1/16W 200	
R1555	ERJ6RBB272	M.RESISTOR CH 1/10W 2.7K	
R1556	ERJ2GEJ331	M.RESISTOR CH 1/16W 330	
R1599	ERJ6GEYG181	M.RESISTOR CH 1/10W 180	
R1601	ERJ2RHD243	M.RESISTOR CH 1/16W 24K	
R1603	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	
R1604	ERJ2GEJ123	M.RESISTOR CH 1/16W 12K	
R1641	ERJ2GEJ151	M.RESISTOR CH 1/16W 150	
R1651	ERJ2GEJ151	M.RESISTOR CH 1/16W 150	
R1652	ERJ2GEJ392	M.RESISTOR CH 1/16W 3.9K	
R1653	ERJ2RHD563	M.RESISTOR CH 1/16W 56K	
R1654	ERJ2RHD563	M.RESISTOR CH 1/16W 56K	
R1655	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R1656	ERJ2GEJ471	M.RESISTOR CH 1/16W 470	
R1901	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	
R1902	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R1903	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R1904	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	
R1905	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	
R1906	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	
R1907	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R1908	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	
R1909	ERJ2GEJ224	M.RESISTOR CH 1/16W 220K	
R1920	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R1926	ERJ2RHD222	M.RESISTOR CH 1/16W 2.2K	
R1927	ERJ2RHD221	M.RESISTOR CH 1/16W 220	
R1928	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	
R1929	ERJ2GEJ221	M.RESISTOR CH 1/16W 220	
R1941	ERJ2RHD561	M.RESISTOR CH 1/16W 560	
R1942	ERJ2RKD270	M.RESISTOR CH 1/16W 27	
R1943	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	
R1944	ERJ2GEJ181	M.RESISTOR CH 1/16W 180	
R1945	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	
R1951	ERJ2RHD113	M.RESISTOR CH 1/16W 11K	
R1952	ERJ2RHD561	M.RESISTOR CH 1/16W 560	
R1953	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	
R1954	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	
R3301	ERJ2GEJ750	M.RESISTOR CH 1/16W 75	
R3302	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	
R3303	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R3304	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R3305	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	
R3306	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R3307	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	
R3308	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	
R3309	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	
R3316	ERJ2GEJ224	M.RESISTOR CH 1/16W 220K	
R3317	ERJ2GEJ224	M.RESISTOR CH 1/16W 220K	
R3320	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	
R4601	ERJ6GEYG392	M.RESISTOR CH 1/10W 3.9K	
R4602	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	
R4603	ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	

Ref. No.	Part No.	Part Name & Description	Remarks
R4604	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	
R4605	ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	
R4606	ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	
R4607	ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	
R4608	ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	
R7001	ERJ6GEYG330	M.RESISTOR CH 1/10W 33	
R7002	ERJ2GEJ393	M.RESISTOR CH 1/16W 39K	
R7003	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	
R7004	ERJ2GEJ822	M.RESISTOR CH 1/16W 8.2K	
R7005	ERJ2GEJ334	M.RESISTOR CH 1/16W 330K	
R7006	ERJ2GEJ564	M.RESISTOR CH 1/16W 560K	
R7007	ERJ6GEYG105	M.RESISTOR CH 1/10W 1M	
R7008	ERJ2GEJ330	M.RESISTOR CH 1/16W 33	
R7009	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	
R7010	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	
R7011	ERJ2GEJ563	M.RESISTOR CH 1/16W 56K	
R7012	ERJ2GEJ562	M.RESISTOR CH 1/16W 5.6K	
R7013	ERJ2GEJ561	M.RESISTOR CH 1/16W 560	
R7014	ERJ2GEJ122	M.RESISTOR CH 1/16W 1.2K	
R7018	ERJ2GEJ681	M.RESISTOR CH 1/16W 680	
R7019	ERJ2GEJ220	M.RESISTOR CH 1/16W 22	
R7020	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	
R7021	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	
T1551	G5DYZ0000005	SWITCHING TRANSFORMER	
T7001	G5DYA0000033	SWITCHING TRANSFORMER	G5DYA0000032
VR7001	EVM3YSX50B53	POTENTIOMETER	
VZ1597	D4ED1270A008	TRANSIENT/SURGE ABSORBER	
VZ1598	D4ED1270A008	TRANSIENT/SURGE ABSORBER	
VZ1599	D4ED1270A008	TRANSIENT/SURGE ABSORBER	
		MISCELLANEOUS	
.	EFN-MVP40	FLASH UNIT	
n	VEK9330	AV/HP JACK FLEX. CARD	(RTL)
JK3350	VJJ0668	AV JACK (4-PIN)	K2HC106B0005
S3350	K0D122A00116	SLIDE SWITCH	

Service Manual

TOP NEXT

ORDER NO. VMD0109026C8

Service Manual

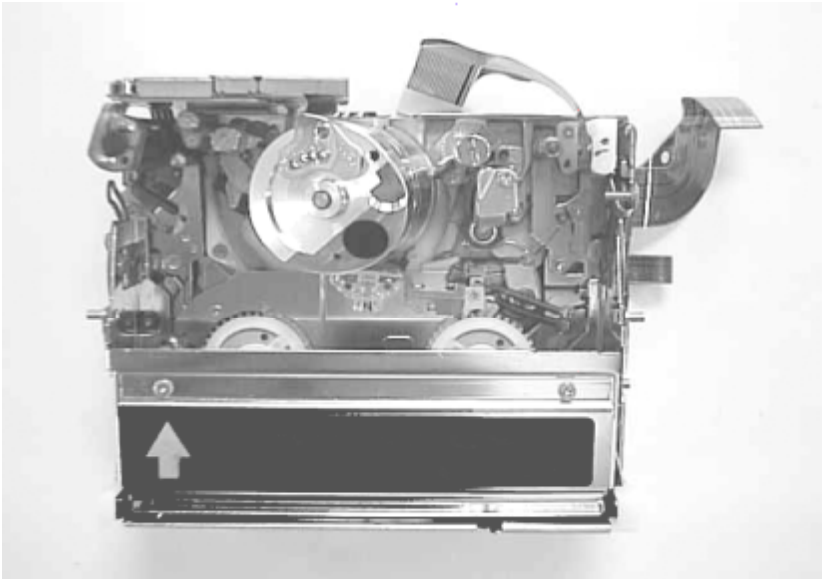
Digital Video Camera/Recorder

Panasonic Mini DV

- Q-MECHANISM

(Including Q1, Q2&Q3)

Disassembly/Assembly Procedures
Adjustment Procedures



Panasonic MC-Service

1.1 UPPER SIDE

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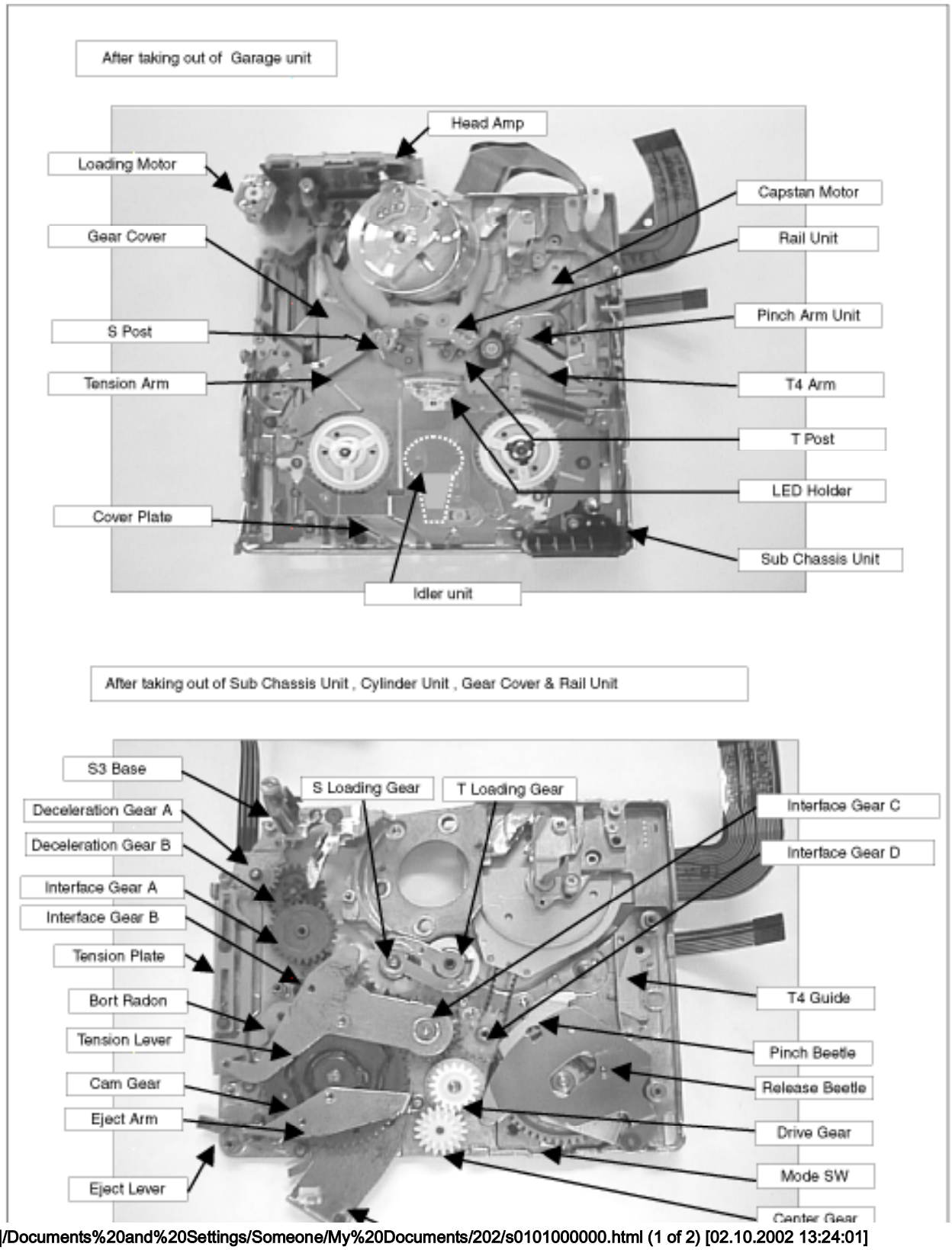

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1.2 BOTTOM SIDE

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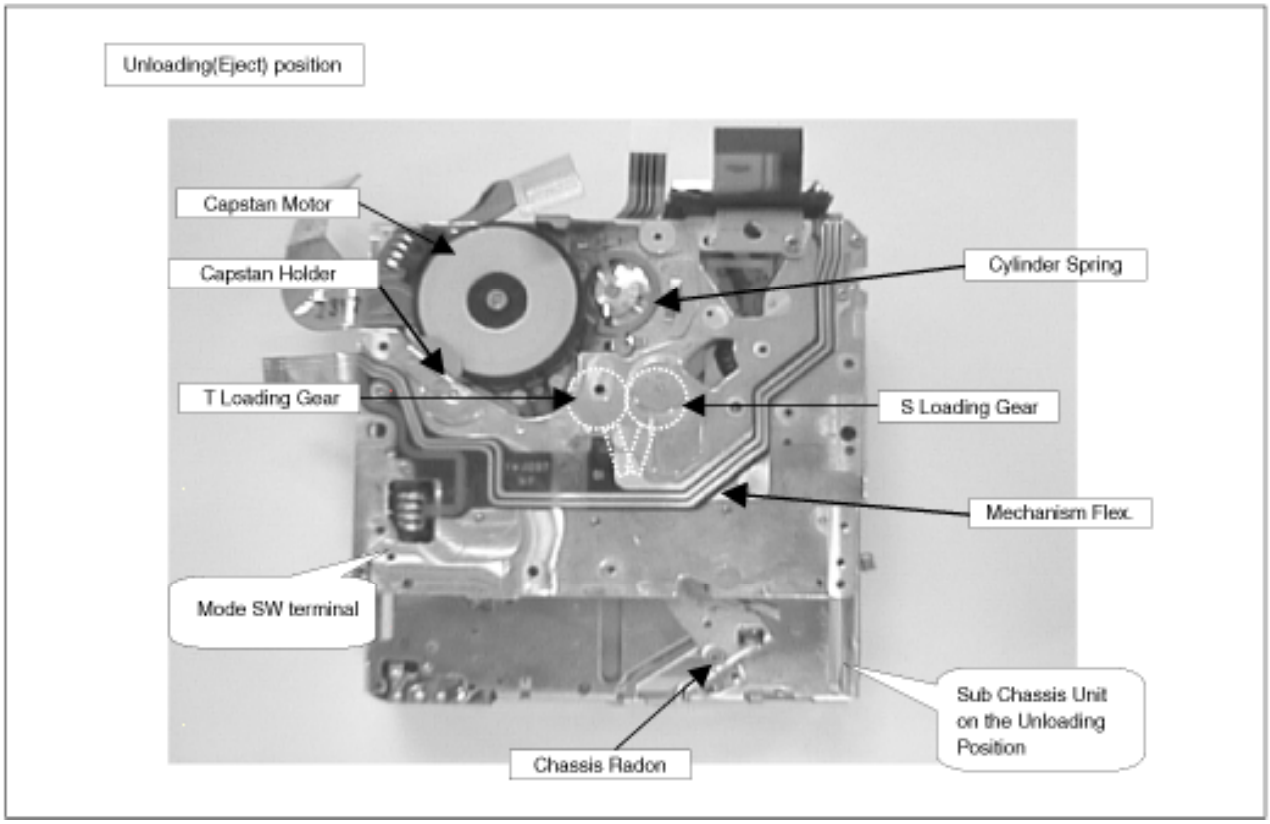

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1.3 SENSOR POSITION

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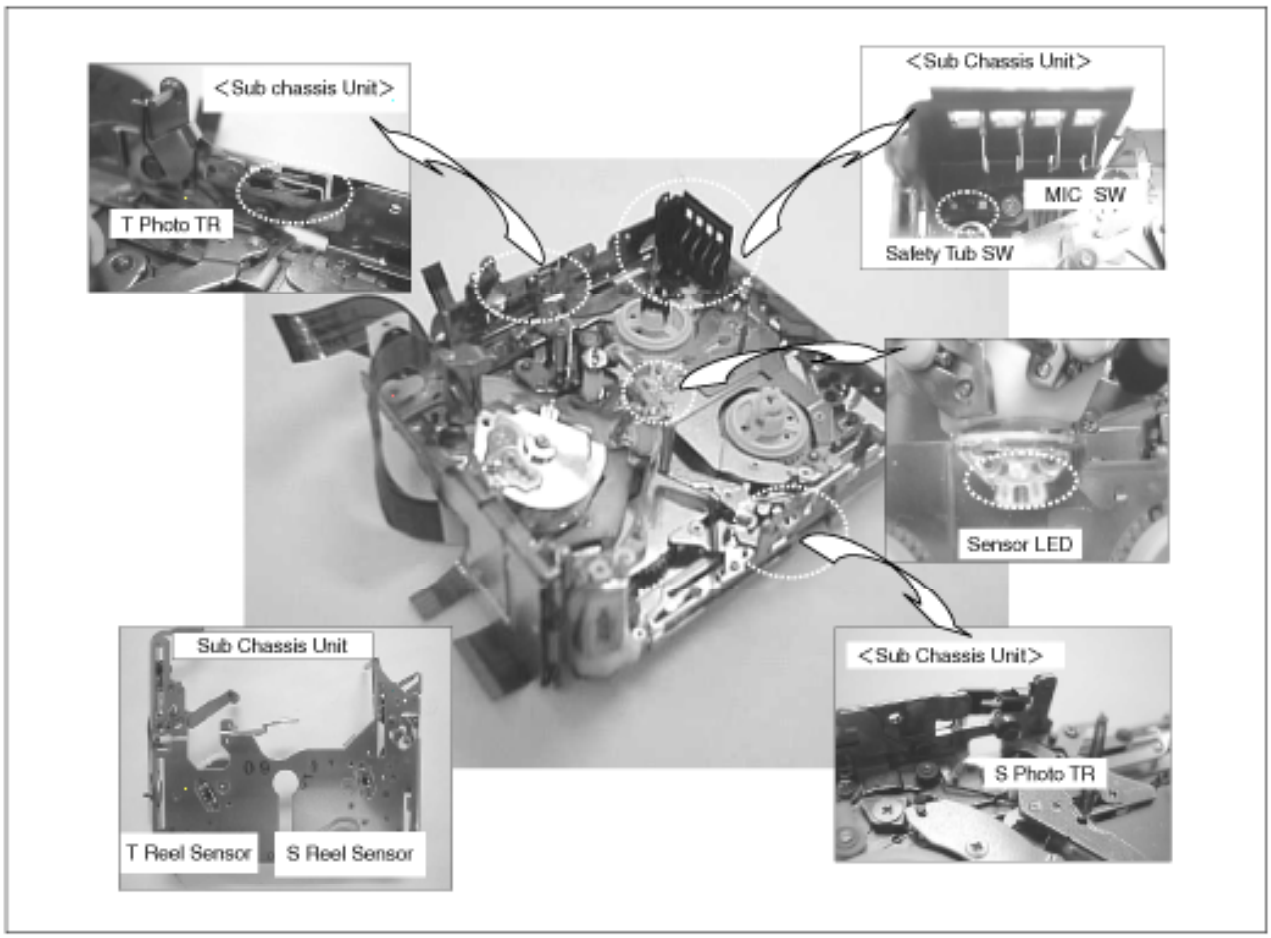

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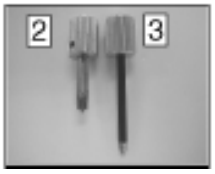
2.1 FIXTURES& TOOLS FOR DISASSEMBLY& ASSEMBLY

TOP PREVIOUS NEXT

No.	Parts number	Parts Name	Q´ty	New	Remarks
1	VFK1390	Precision Driver	1	•	
2	VFK1444	Gear Driver	1	•	
3	VFK1444Q2	Gear Driver for Q2 & Q3mecha.	1	•	
4	VFK1650	Cut Washer Jig(0.86)	1	•	
5	VFK1649	Cut Washer Jig(0.65)	1	•	
6	VFK1024	Molytone Grease	1	•	



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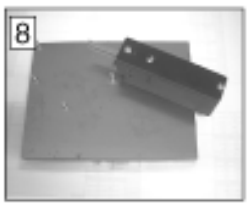
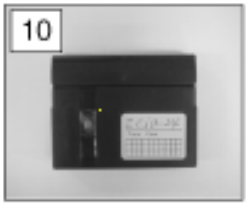
MC-Service

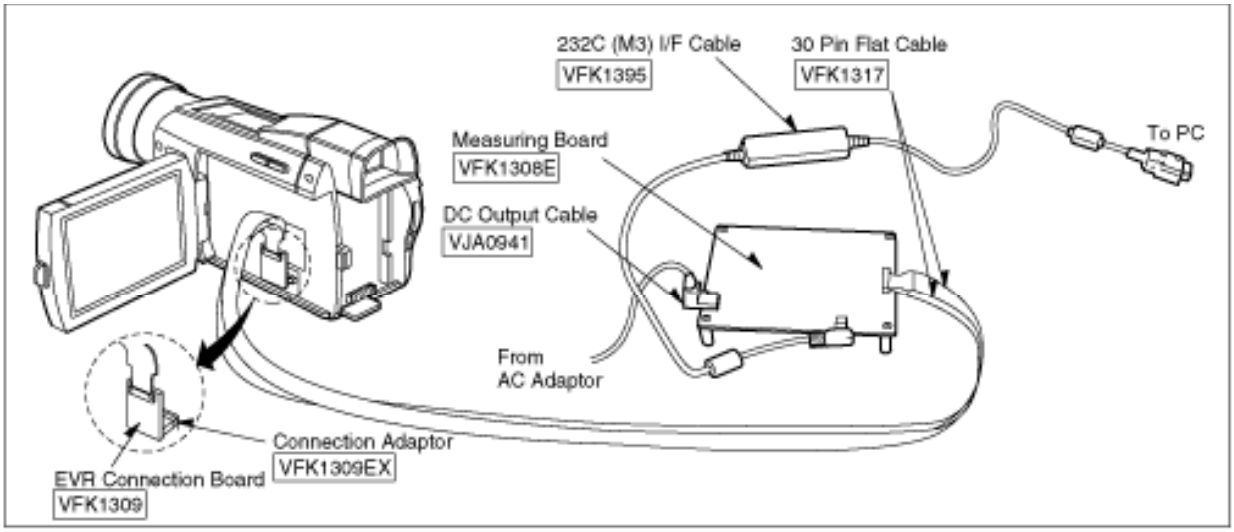
2.2 FIXTURES&TOOLS FOR MECHANICAL ADJUSTMENT

TOP PREVIOUS NEXT

No.	Parts number	Parts Name	Q´ty	New	Remarks
7	VFK1278	Post Adjustment Driver	1	•	
8	VFK1638	Capstan Tilt Adj. Jig	1	•	
9	VFK1641	Envelope Detecor Board	1	•	
10	VFM3110EDS(PAL)	DV Alignment Tape	1	--	or VFM3010EDS(NTSC)
11	VFK1395	232C(M3) I/F Cable	1	--	"TATSUJIN" system
12	VFK1308E	Measuring Board	1	--	"TATSUJIN" system
13	VFK1309	EVR Connecor Board	1	--	"TATSUJIN" system
14	VFK1309EX	Connection Adaptor		--	"TATSUJIN" system
15	VFK1317	30pin Flat Cable	2	--	or VFK1517(New - 300mm) "TATSUJIN" system
16	VJA0941	DC Output Cable	1	--	"TATSUJIN" system







2.3 MAINTENANCE FOR CAPSTAN TILT ADJUSTMENT JIG.

TOP PREVIOUS NEXT

1. Keep applying oil for preventive oxidation on base block.

   Glove should be used when you apply oil.

2. Do not apply pressure to this jig.

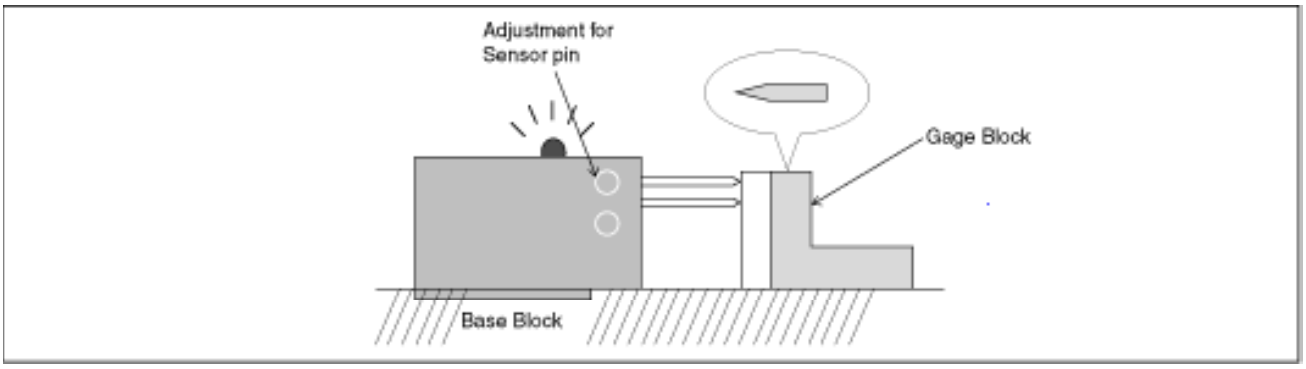
3. If Brightness of LED become weak, Battery (SUM4 X 2) in the top of box should be changed.

4. Inspect sensor pin regularly as following.

   A. Put Gage Block to sensor pin.

   B. Confirm LED is lit.

      If not, adjust sensor pin by rotating a screw.



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MC-Service

3.1 PREPARATION FOR DISASSEMBLY

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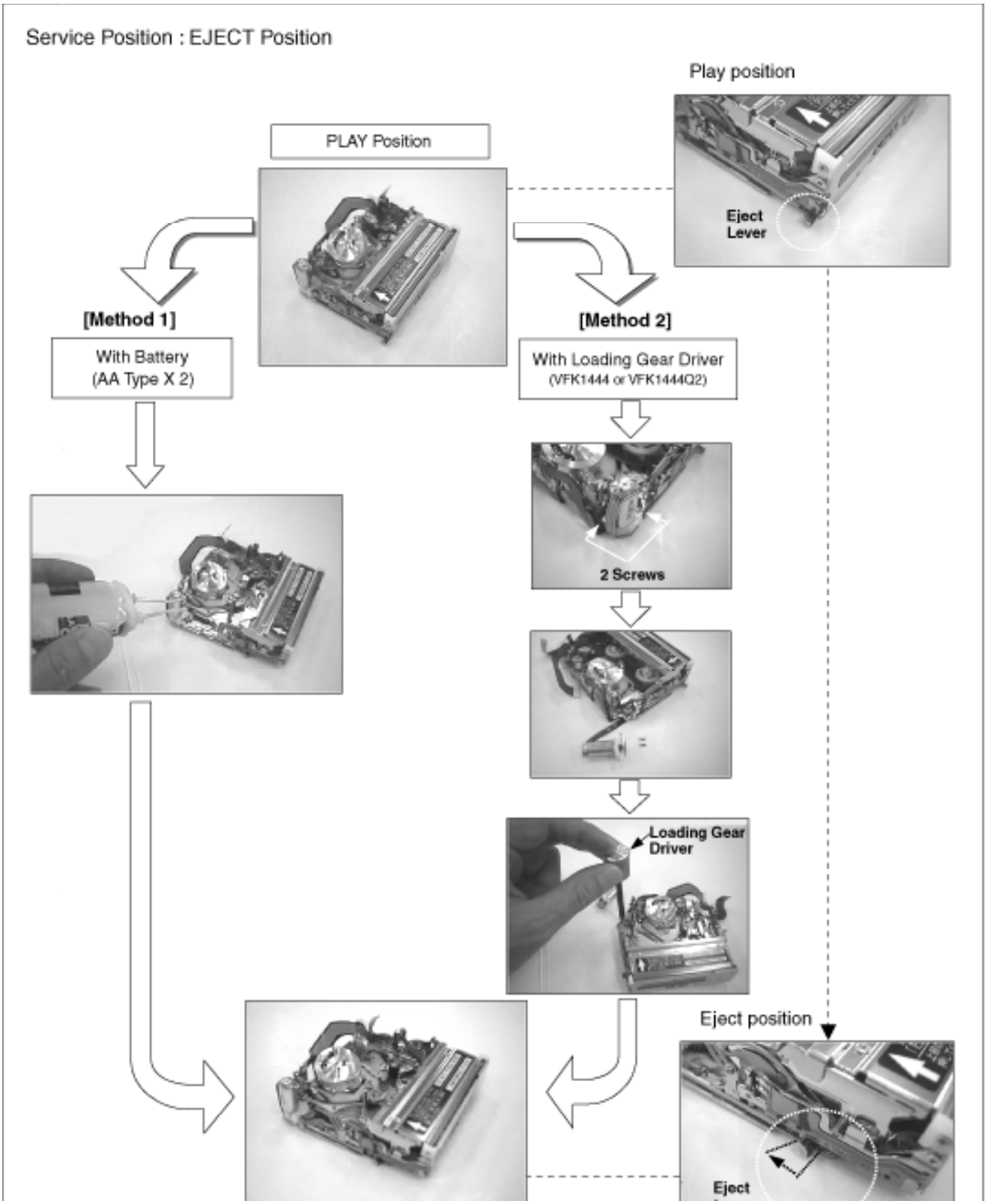

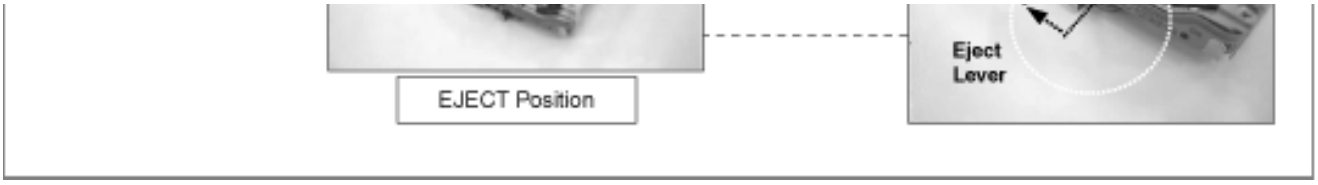

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3.2 DISASSEMBLY PROCEDURE

TOP PREVIOUS NEXT

No.	Item	Fig.	Procedure
1	Cassette Up Unit.	Fig. D1-1	1) Remove 3 screws. (Q1 &2 have 4 screws)
		Fig. D1-2	2) Take coupling portion off from both S &T sides.
*2	H Amp Unit./(Only Q1 & Q2)	Fig. D2-1	1) Remove a screw from Shield case.
		Fig. D2-2	2) Take Cylinder Flex. From connector.
		Fig. D2-3	3) Remove a screw from H Amp Angle.
3	Cylinder Unit & RT Flex. Flame.	Fig. D3-1	1) Remove a screw from RT Flex. Flame.
		Fig. D3-2	2) Remove 3 screws and then take Cylinder Spring out.
		Fig. D3-3	3) Remove a screw and take RT Flex. Flame out.
4	LED Holder, Cover plate & Idler U.	Fig. D4-1	1) Pull up and remove LED Holder.
		Fig. D4-2	2) Move LED Flat Cable out of position and unhook 2 springs.
		Fig. D4-3	3) Remove 5 screws and remove Cover Plate & Idler U.
5	Sub Chassis Unit	Fig. D5-1	1) Remove 4 screws.
		Fig. D5-2	2) Remove a screw and unhook a spring from Pinch Arm.
6	Pinch Arm & Center Gear	Fig. D6-1	1) Remove Cut Washer and take Pinch Arm out. 2) Take Center Gear out.
		Fig. D6-2	3) Take Center Gear Spacer out.
7	Rail Unit	Fig. D7-1	1) Make half loading until / Connection Arm comes out.
		Fig. D7-2	2) Disconnect Connection Arms. a) Hold Loading Gear side. b) Disconnect connection arms.
		Fig. D7-3	3) Remove 4 screws.
8	T-Loading Gear & S-Loading Gear	Fig. D8	1) Take T-Loading Gear out. 2) Remove Cut Washer on S-Loading Gear and take S-Loading Gear out. * Removed Cut Washer can not be used again.
9	Gear Cover	Fig. D9	1) Remove a screw and slide Gear Cover to take out.
10	Pinch Beetle & Release Beetle	Fig. D10	1) Remove a washer and take Pinch Beetle and Release Beetle out together.
11	Tension Lever & Eject Arm.	Fig. D11	1) Remove a screw and take Tension Lever out. 2) Remove a washer and take Eject Arm out.
12	Interface Gears	Fig. D12	1) Remove 4 Gears.
13	Cam Gear	Fig. D13	1) Remove Cam Gear.

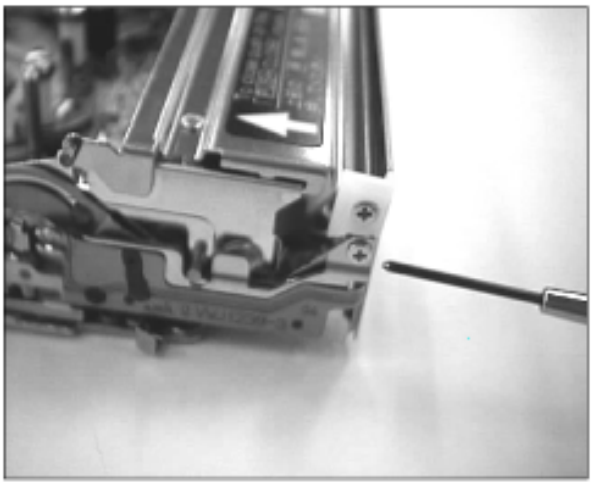
14	Chassis Radon	Fig. D14	1) Remove a washer.
15	Boat Radon	Fig. D15	1) Remove Boat radon.
16	Drive Gear	Fig. D16	1) Remove Drive Gear and a White Waher underneath.
17	Capstan Holder & Capstan Motor	Fig. D17-1	1) Remove 2 screws and take Capstan Holder out. * It is not necessary to remove 2 screws for New Capstan Holder. Because it shapes screw.
		Fig. D17-2	2) Remove 3 screws and take Capstan Motor out downword.
18	Loading Motor unit & Mechanism Interface Flex.	Fig. D18-1	1) Remove 2 screws and take Loading Motor Unit out.
		Fig. D18-2	2) Remove 4 screws and dissolder at Mode Sw.
*19	Mode Switch , Deceleration Gears & Tension Plate.	Fig. D19	1) Take Mode Sw out. 2) Remove a washer and take Deceleration Gear (A) out. 3) Take Deceleration Gear (B) out. 4) Remove 2 washers and take Tension Plate.
*20	T4 Guide , Eject Lever , Pulley Cover & Pulley.	Fig. D20-1	1) Remove a screw and take T4 Guide out.
		Fig. D20-2	2) Remove a washer and take Eject Lever out.
		Fig. D20-3	3) Remove 2 screw and take Pulley Cover out. 4) Take Pulley out.
*21	S3 Base U.	Fig. D21	1) Remove a screw for S3 adjustment and take S3 Base U.

* 1) Procedure 2 for H.Amp Unit is applied only Q1 & Q2 / mechanism. 2) Procedure 19 - 21 can be changed in order.

Fig. D1-1

MC-Service

1/3 (Left)
* Lower one



2/3 (Front)
* Q1 & Q2 : 2screws

3/3 (Right)
* Lower one

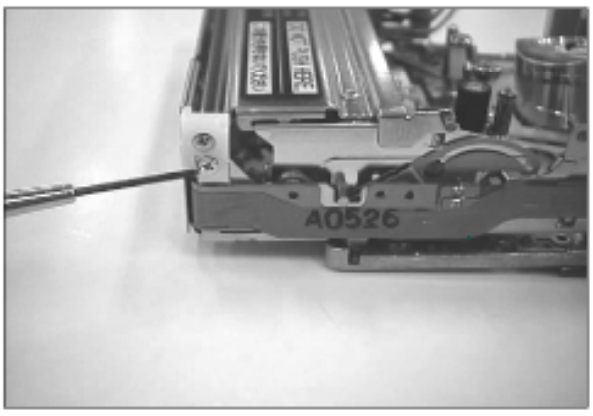


Fig. D1-2

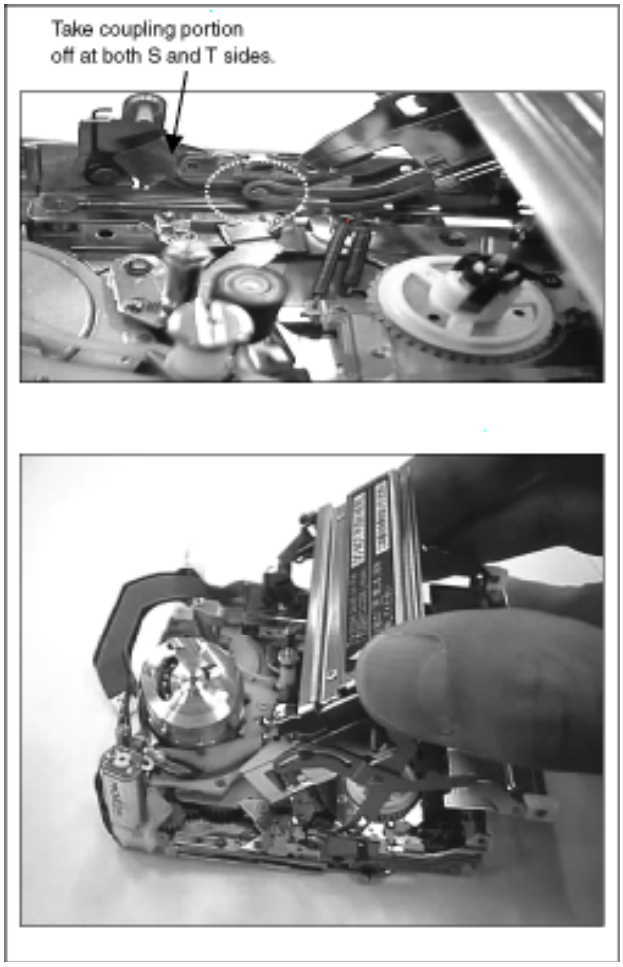


Fig. D2-1

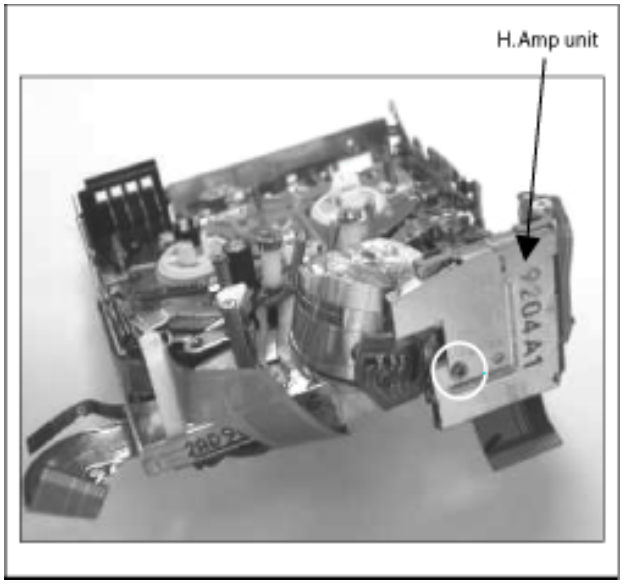


Fig. D2-2

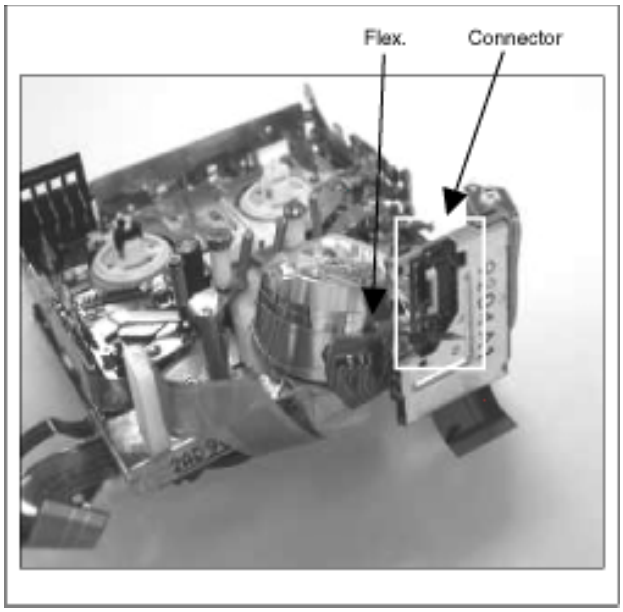


Fig. D2-3

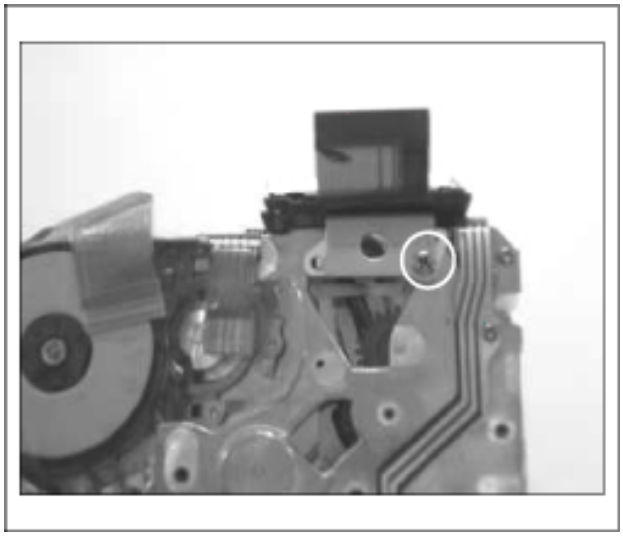


Fig. D3-1

MC-Service

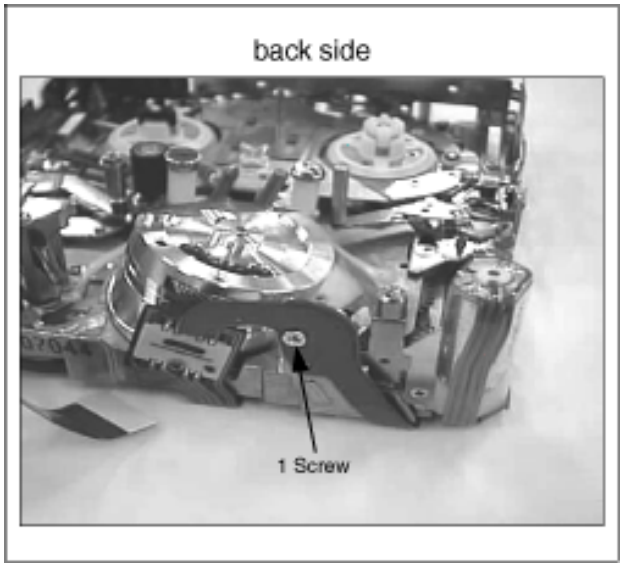


Fig. D3-2

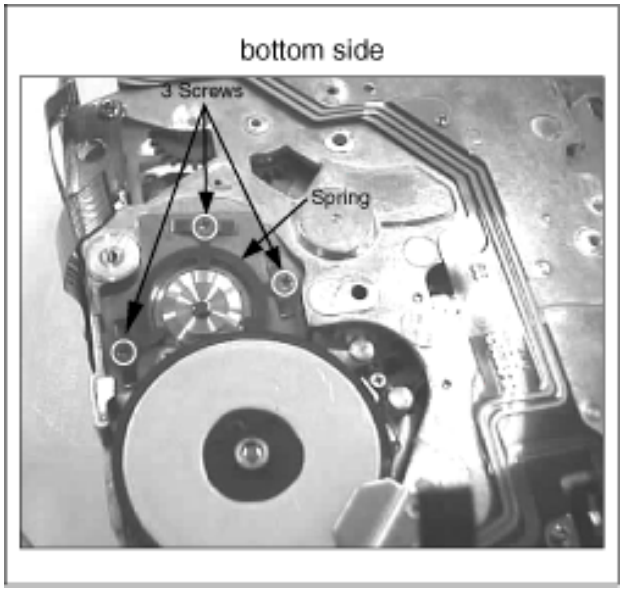


Fig. D3-3

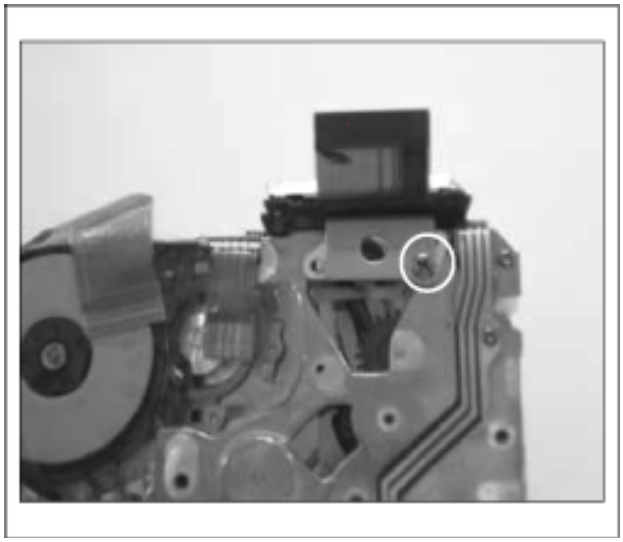


Fig. D4-1

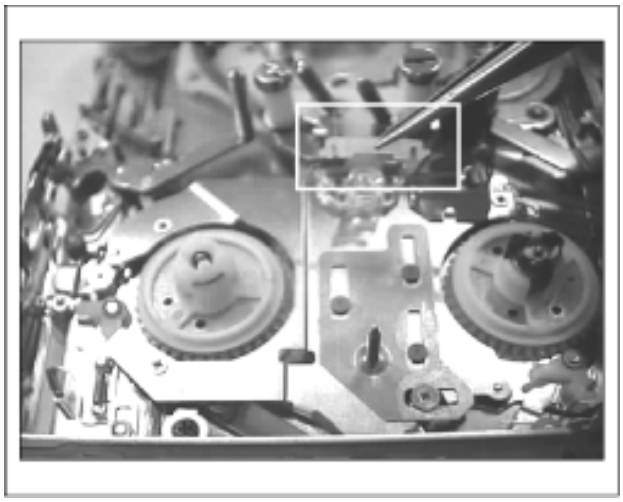


Fig. D4-2

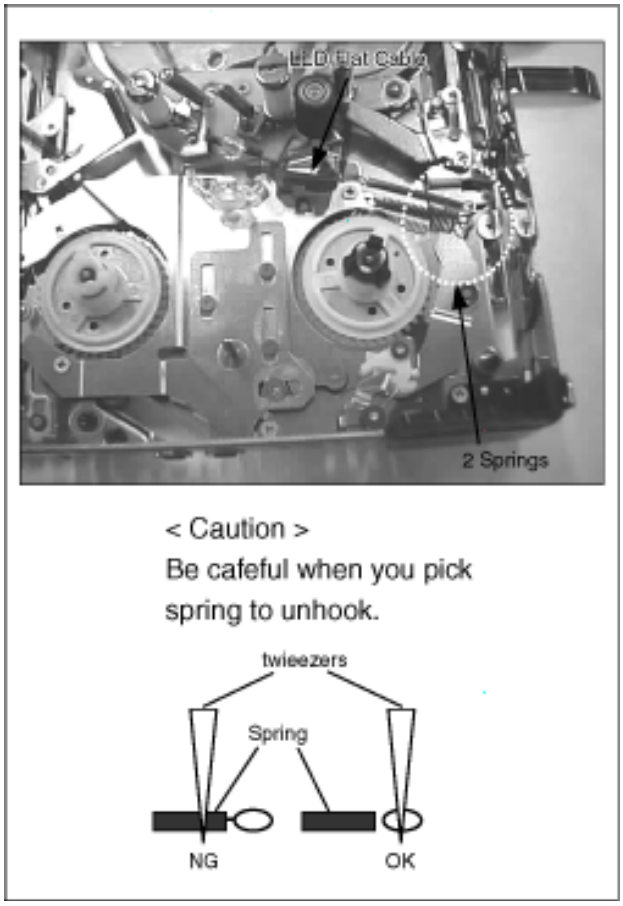
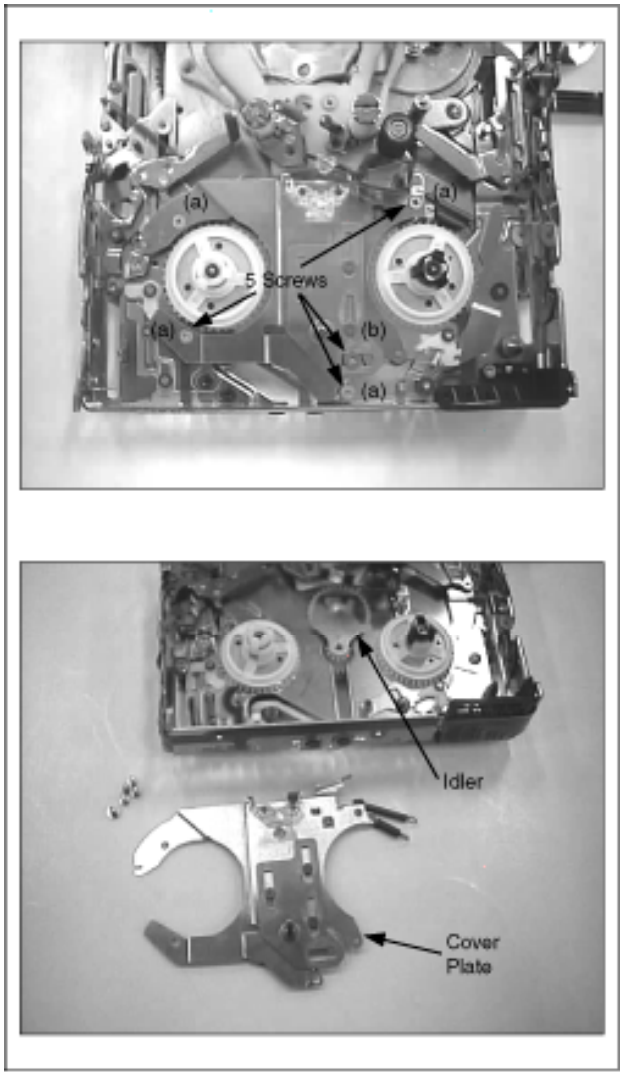

LED Flat Cable
2 Springs
< Caution >
Be cafeful when you pick
spring to unhook.
twieezers
Spring
NG
OK

Fig. D4-3



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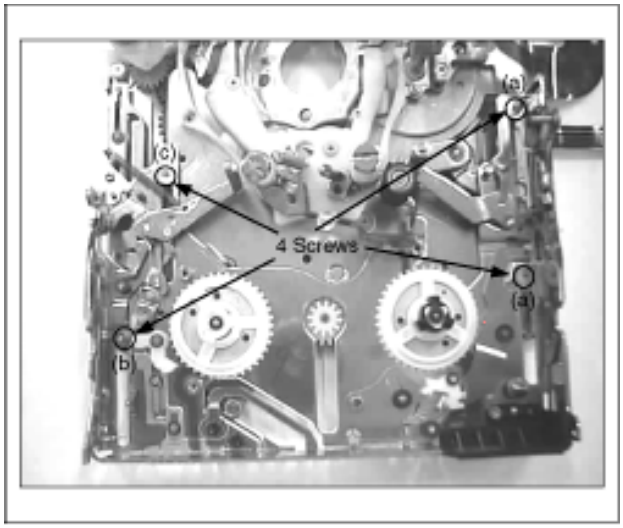


Fig. D5-2

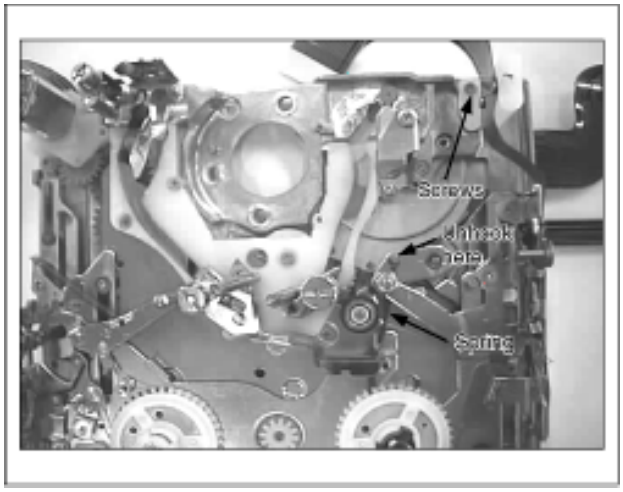


Fig. D6-1

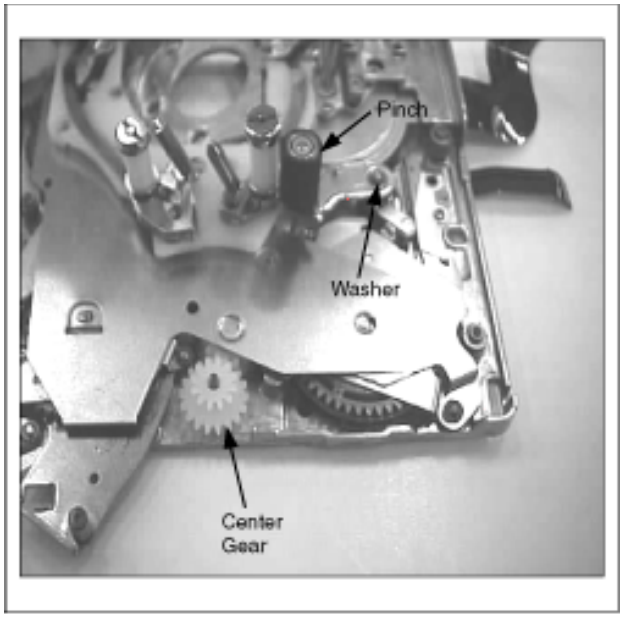


Fig. D6-2

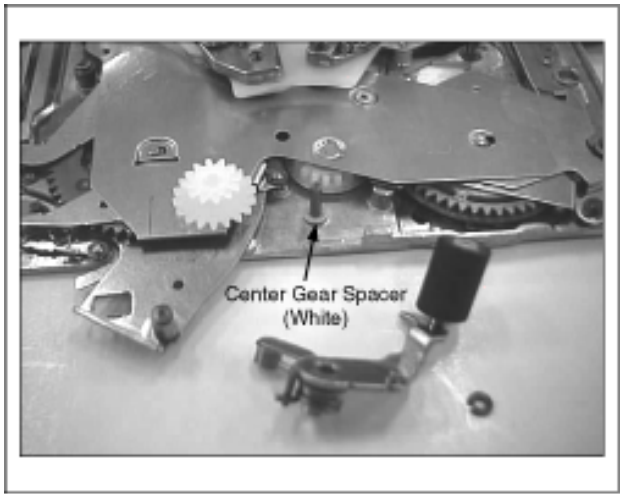


Fig. D7-1

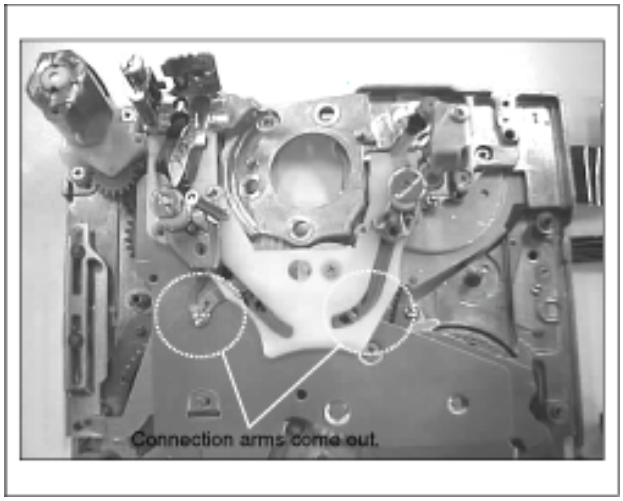


Fig. D7-2

MC-Service

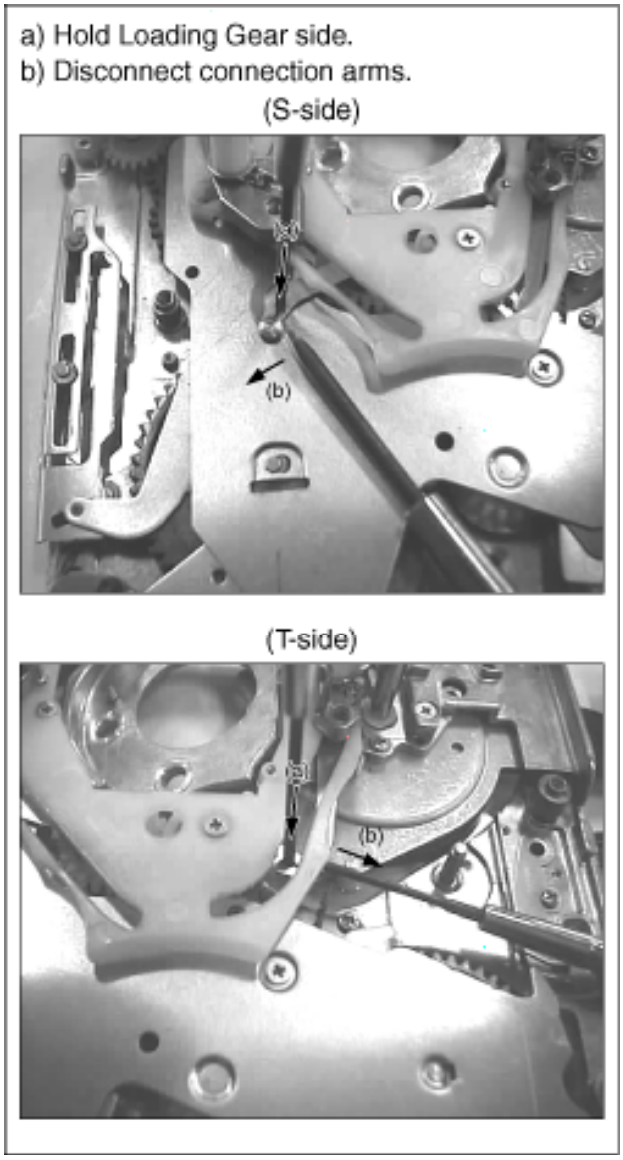

a) Hold Loading Gear side.
b) Disconnect connection arms.
(S-side)
(a)
(b)
(T-side)
(a)
(b)

Fig. D7-3

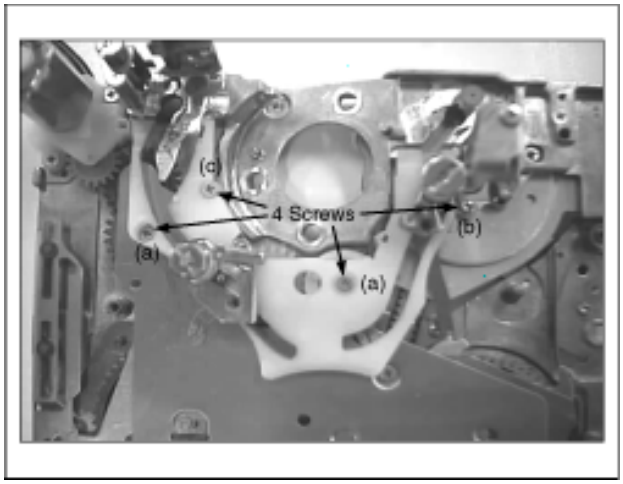

(c)
4 Screws
(b)
(a)
(a)

Fig. D8

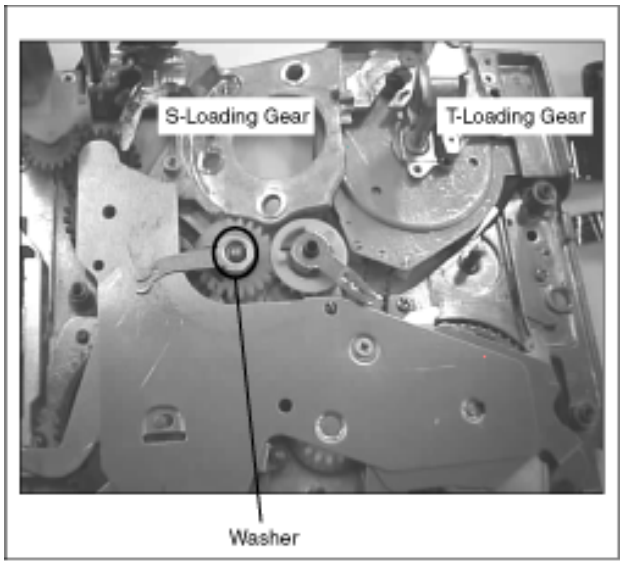


Fig. D9

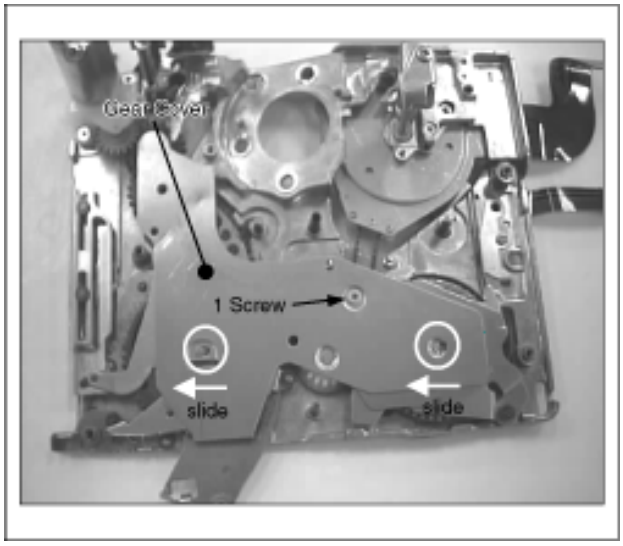


Fig. D10

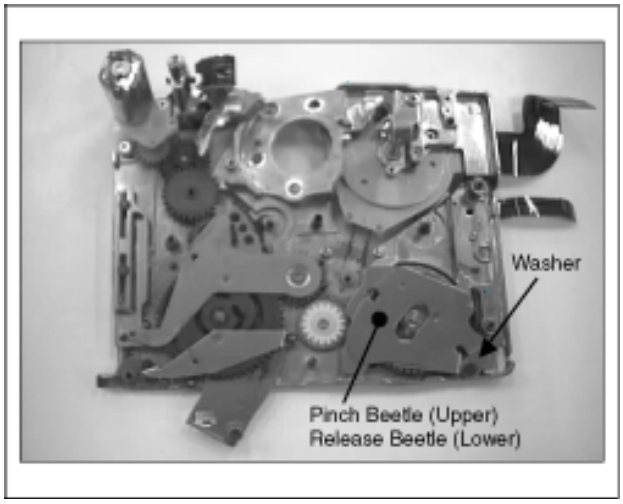


Fig. D11

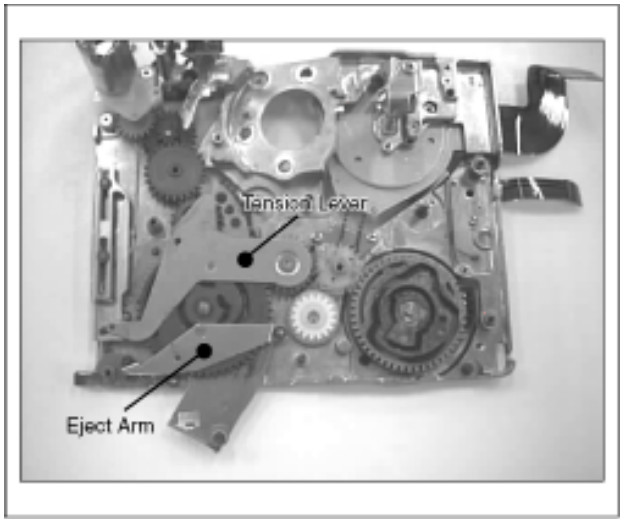


Fig. D12

MC-Service

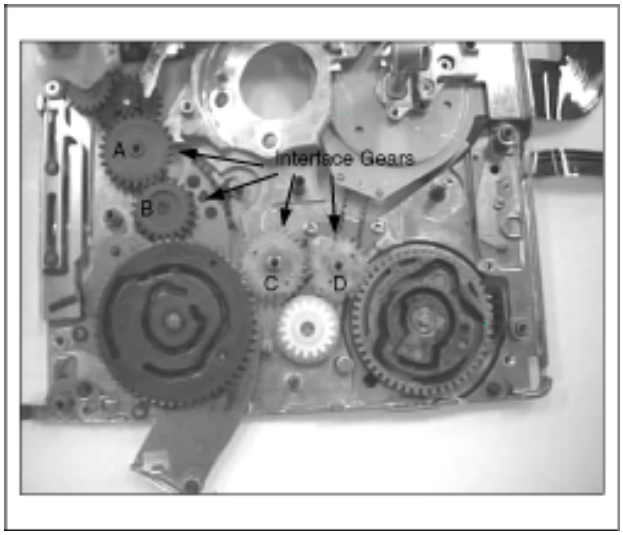


Fig. D13

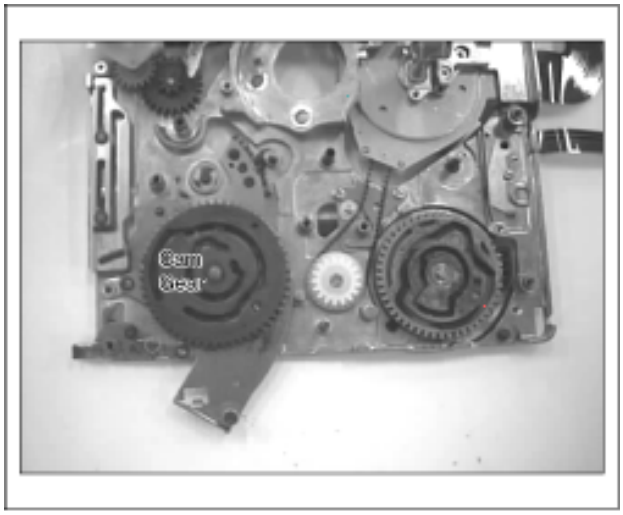


Fig. D14

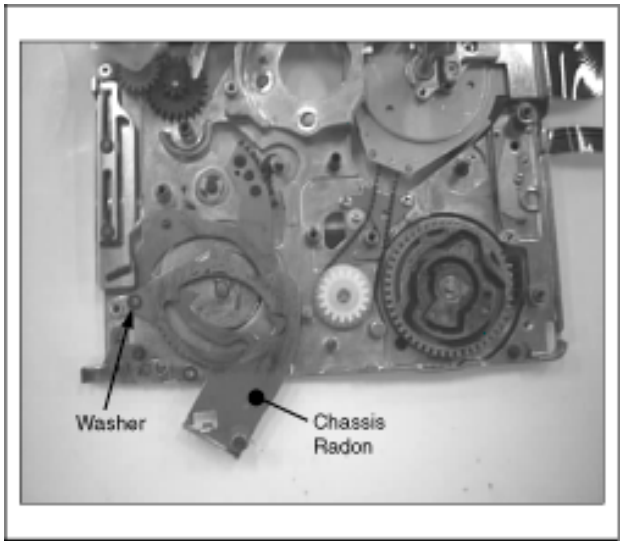


Fig. D15

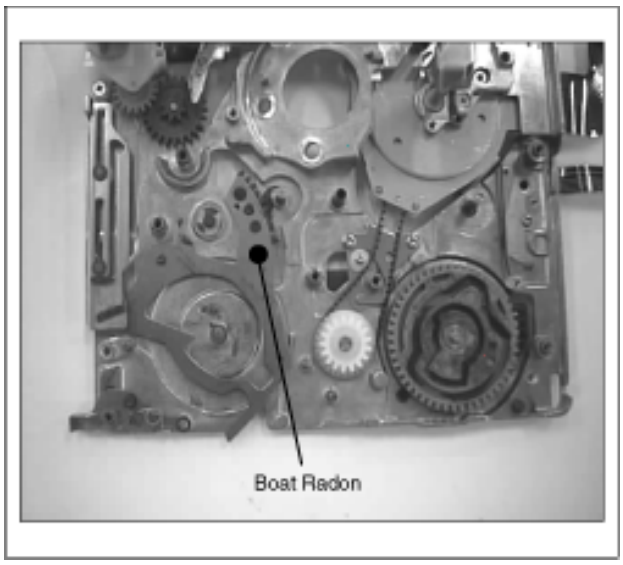


Fig. D16

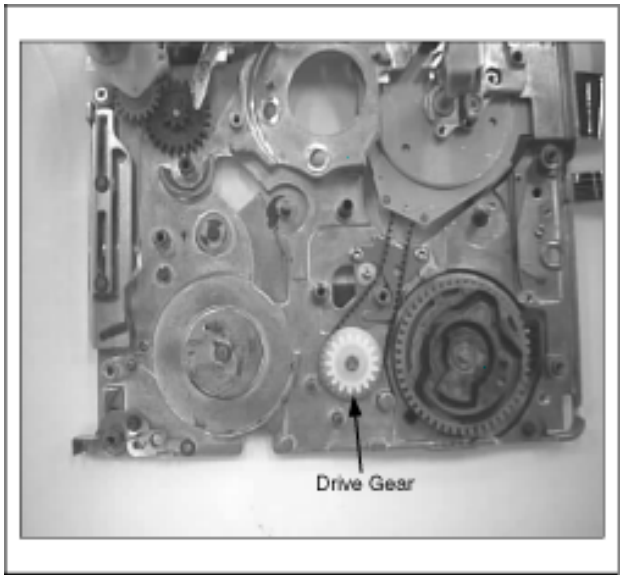


Fig. D17-1

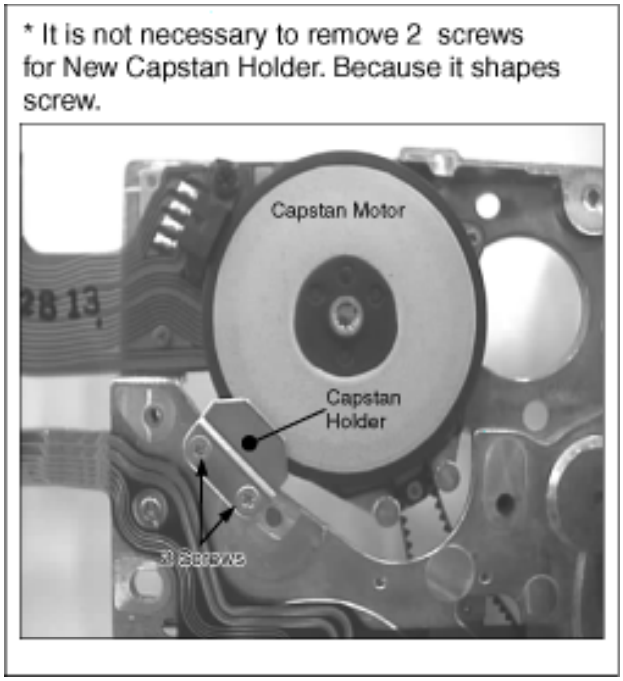


Fig. D17-2

MC-Service

Fig. D18-1

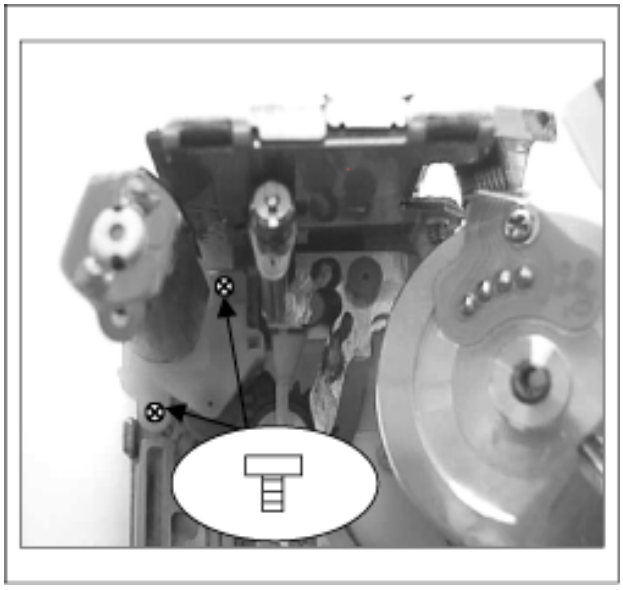


Fig. D18-2

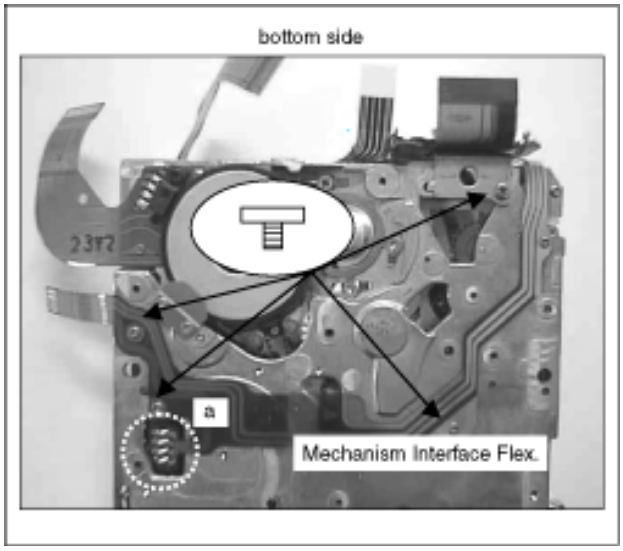


Fig. D19

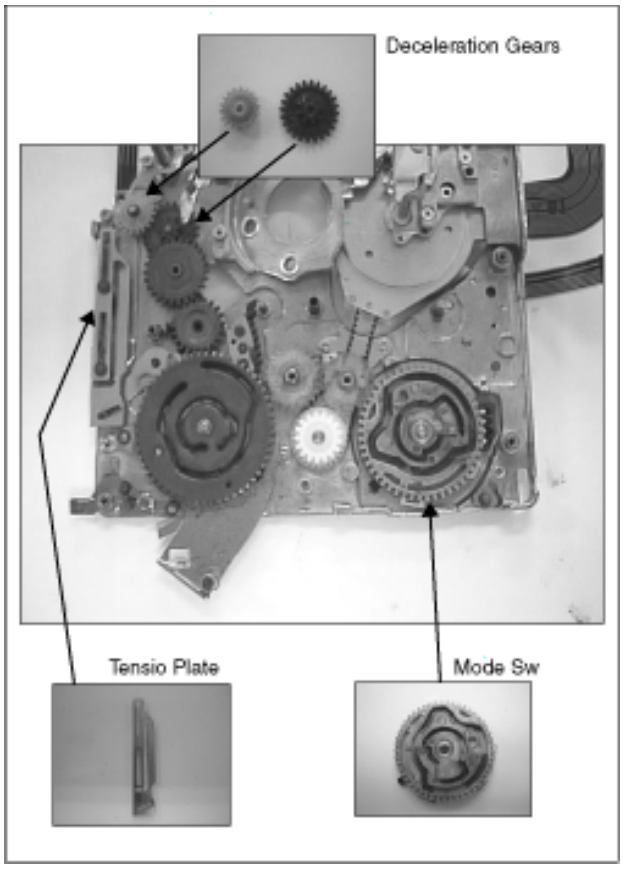


Fig. D20-1

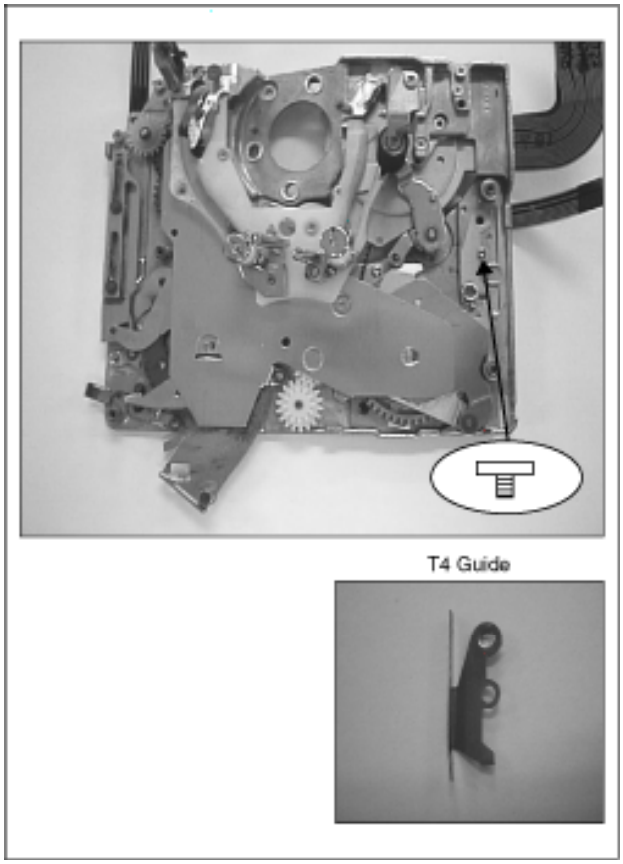


Fig. D20-2

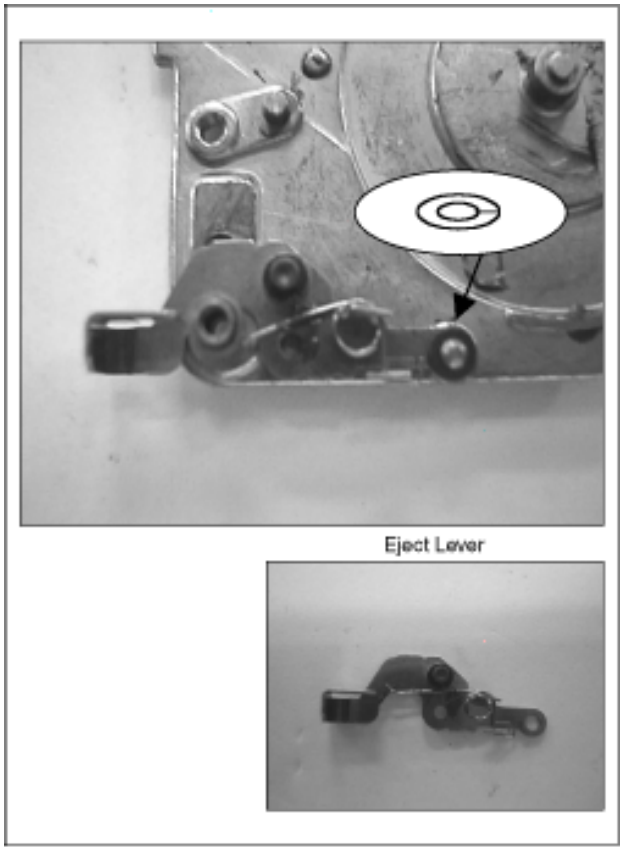


Fig. D20-3

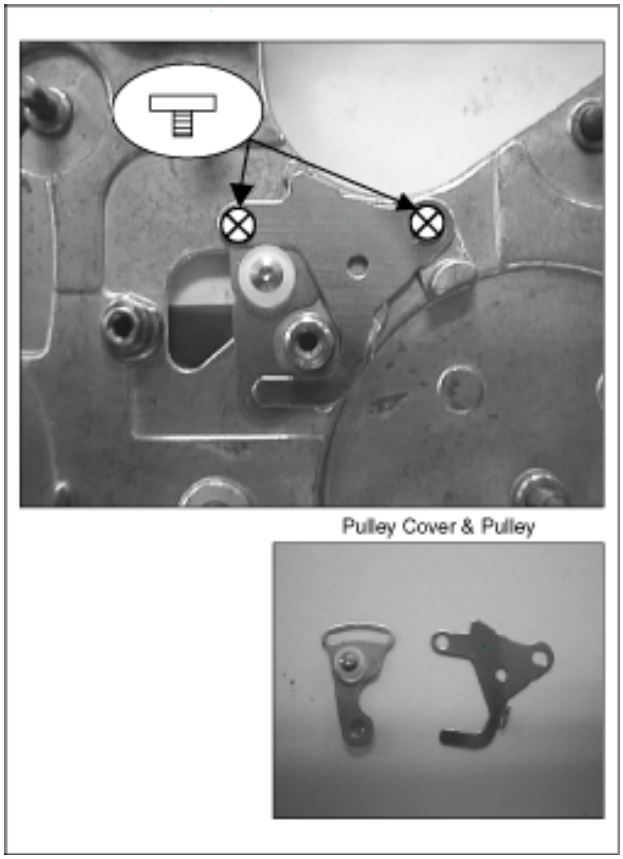
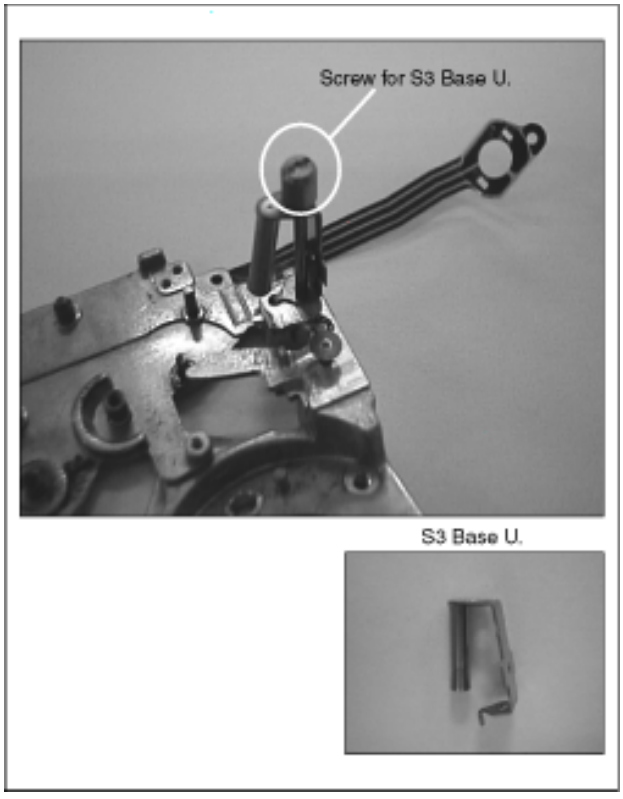


Fig. D21



4.1 ASSEMBLY PROCEDURE

TOP PREVIOUS NEXT

* 1) Procedure 20 for H.Amp Unit is applied only Q1 & Q2 mechanism.

2) Procedure 1 - 3 can be changed in order.

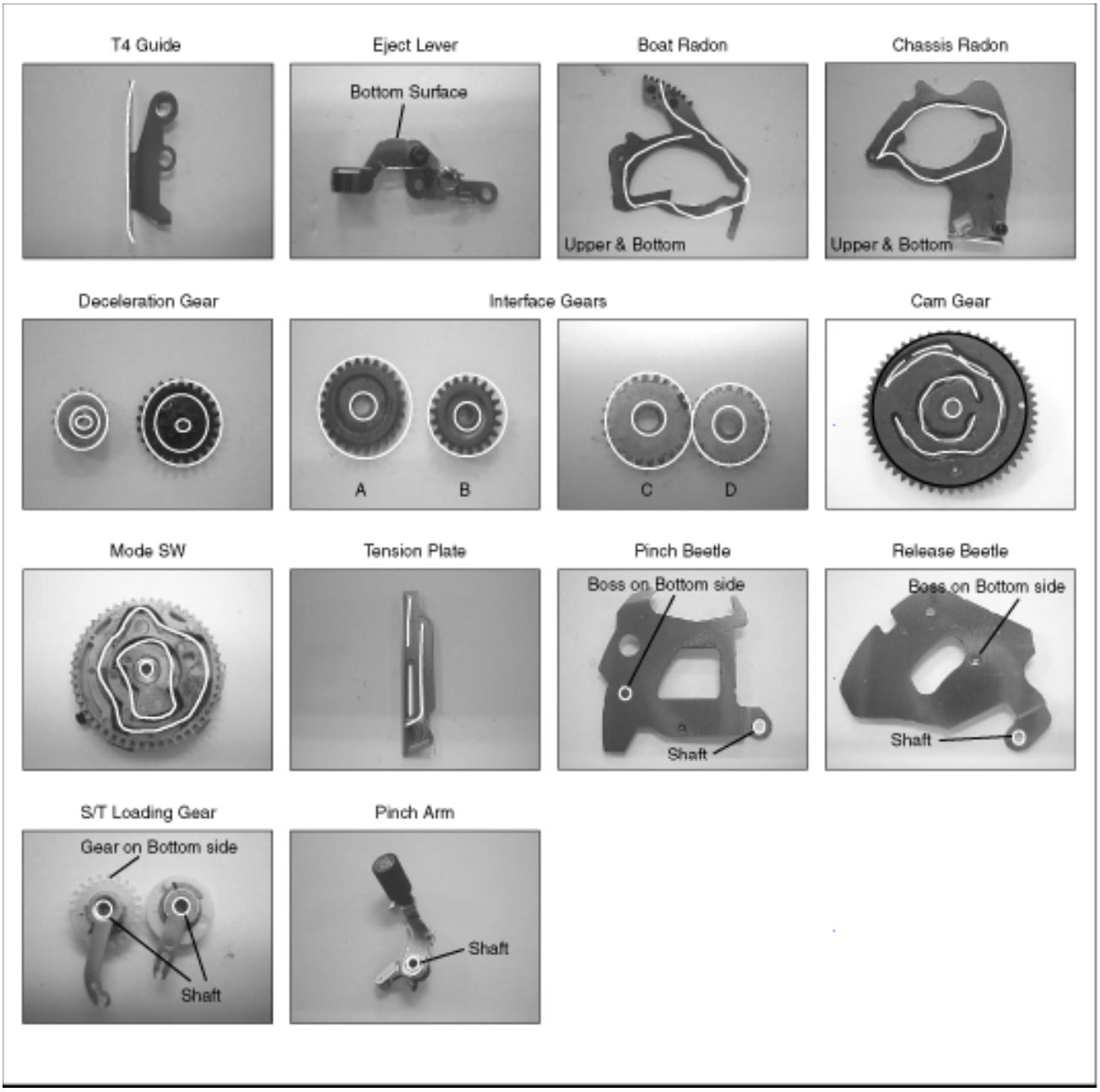
No.	Item	Fig.	Grease	Procedure
*1	S3 Base U.	Fig. A1	--	1) Put S3 Base U on and tighten a screw.
*2	T4 Guide , Eject Lever, Pulley Cover & Pulley.	Fig. A2-1	•	1) Put hole of T4 Guide to hole of chassis and tighten a screw.
		Fig. A2-2	•	2) Put Eject Lever on and a washer.
		Fig. A2-3	--	3) Put boss of Pulley to hole of chassis on. Hole of chassis under pulley should be visible through slit of Pulley.
		Fig. A2-4	--	4) Put Pulley Cover on Pulley and tighten 2 screws.
*3	Mode Switch , Deceleration Gears & Tension Plate.	Fig. A3	•	1) Put Mode Sw on.
			•	2) Put Deceleration Gear (B) on
			•	3) Put Deceleration Gear (A) on and a washer.
			•	4) Put Tension Plate on and 2 washers.
4	Loading Motor unit & Mechanism Interface Flex.	Fig. A4	--	1) Put Loading Motor Unit on and tighten 2 screws.
			--	2) Put Mechanism Interface Flex on and tighten 4 screws. After that, solder at terminal of Mode Sw.
5	Capstan Holder & Capstan Motor	Fig. A5-1	--	1) Put Capstan Motor on and tighten 3 screws. Timing Belt should be between Pulley and boss.
		Fig. A5-2	--	2) Put Capstan Holder on and tighten 2 screws.
6	Drive Gear	Fig. A6	--	1) Put a washer to shaft and install Drive Gear. Timing Belt should be wound around Drive Gear. After that, confirm Timing Belt and Gear are rotated together.
7	Boat Radon	Fig. A7	•	1) Put hole of Boat radon to shaft of chassis.
8	Chassis Radon	Fig. A8	•	1) Put Chassis Radon and a washer on.
9	Cam Gear	Fig. A9	•	1) Put Cam Gear on. Phase Mark should be in the same line with chassis of shaft..
10	Interface Gears	Fig. A10-1	•	1) Put Interface Gear(C) & (D). Each phase mark should be in the same line.
		Fig. A10-2	•	2) Put Interface Gear(A) & (B) on.
11	Tension Lever & Eject Arm.	Fig. A11	--	1) Put boss of Tension Lever into slit of Cam Gear and Tension Plate, then tighten a screw.

MC-Service

				2) Put boss of Eject Arm into slit of Cam Gear. Put a washer on shaft of chassis.
12	Pinch Beetle & Release Beetle	Fig. A12	•	1) Put boss of Pinch Beetle into slit of Mode Sw.
				2) Put boss of Release Beetle into slit of Mode Sw.
				3) Put a washer on.
13	Gear Cover	Fig. A13	--	1) Keep sliding Gear Cover and put it on.
				2) Tighten a screw.
14	T-Loading Gear & S-Loading Gear	Fig. A14	•	1) Put S-Loading Gear on.
				2) Put T-Loading Gear on. Each phase mark should be in the same line.
15	Rail Unit	Fig. A15-1	--	1) Make half loading until Connection Arm comes out.
		Fig. A15-2	--	2) Connect Arm of S & T Loading Gear and Connection Arms. a) Hold Loading Gear side. b) Push Arm of S & Tloading Gear into slit of connection arms.
		Fig. A15-3	--	3) Tighten 4 screws.
16	Pinch Arm & Center Gear	Fig. A16-1	--	1) Put Center Gear Spacer on shaft of chassis.
				2) Put Center Gear on.
		Fig. A16-2	•	3) Make full loading position and put Pinch arm on, then put a washer on.
17	Sub Chassis Unit	Fig. A17-1	--	1) Make unloading position until moving Release Beetle Confirm spring is exist.
		Fig. A17-2		2) Put Sub Chassis Unit on as pre-installation.
		Fig. A17-3		3) Tighten 3 screws. Make Loading position until 1 screw position appears, then tighten a screw.
		Fig. A17-4		4) Tighten a screws at Flex Holder portion and Hook spring back to Pinch Arm.
18	LED Holder, Cover plate & Idler U.	Fig. A18-1	--	1) Put Idler U into shaft of Drive Gear.
		Fig. A18-2	--	2) Put Cover Plate on and tighten 5 screws, then hook 2 springs to 2hooking portion of Sub chassis. And also put LED Flat Cable back.
		Fig. A18-3		3) Put LED Holder back.
19	Confirmation of Mechanism movement , Cylinder Unit & RT Flex. Flame.	Fig. A19-1	--	1) Confirm loading and unloading is smooth.
		Fig. A19-2	--	2) Put Cylinder Unit & Spring on and tighten 3 screws.
		FIg. A19-3	--	3) Put RT Flex. Flame on and tighten 2 screws.
*20	H Amp Unit. (Only Q1 & Q2)	Fig. A20-1	--	1) Put H Amp Unit on and tighten a screw at bottom of chassis.
		Fig. A20-2		2) Connect Cylinder Flex to connector.

		Fig. A20-3		3) Put Shield case on and tighten a screw.
21	Cassette Up Unit.	Fig. A21-1	--	1) Put both S &T sides to coupling portion on.
		Fig. A21-2		2) Tighten 3 screws. (Q1 &2 have 4 screws)

The following parts should be applied Molyton Grease (VFK1024).



How to use washer jigs.

No.	Item	Fig.	Procedure

1	Washer Jigs	Fig. W1-1	1) Each Washers.
2		Fig. W1-2	1) Put a washer on tip of Jig.
3		Fig. W1-3	1) Put Jig on shaft.
4		Fig. W1-4	1) Put a washer on shaft by pressing Jig.

Fig. W1-1

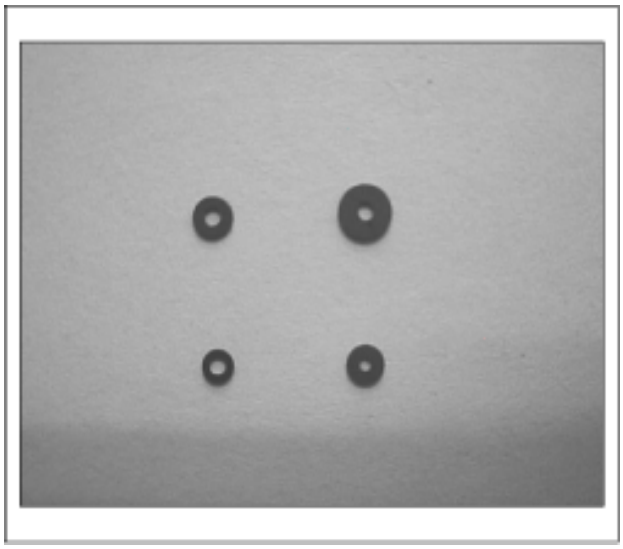


Fig. W1-2

MC-Service

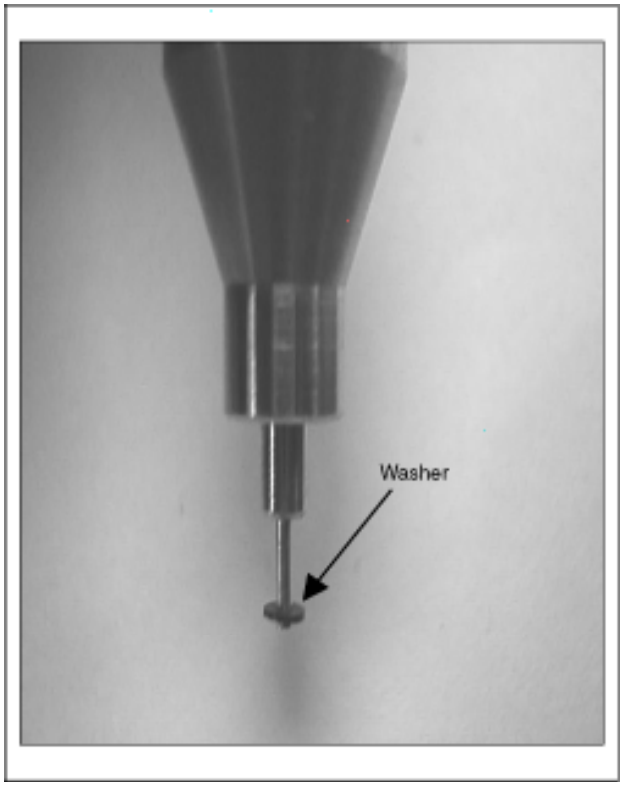


Fig. W1-3

Fig. W1-4

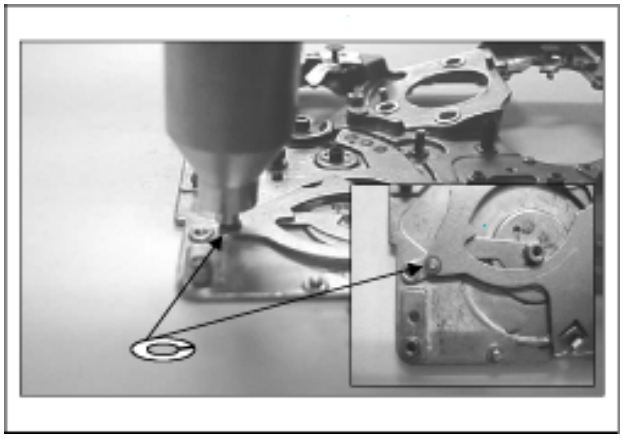


Fig. A1

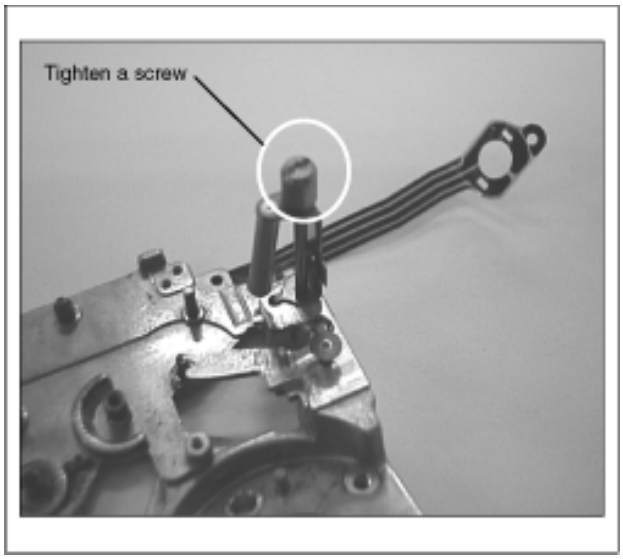


Fig. A2-1

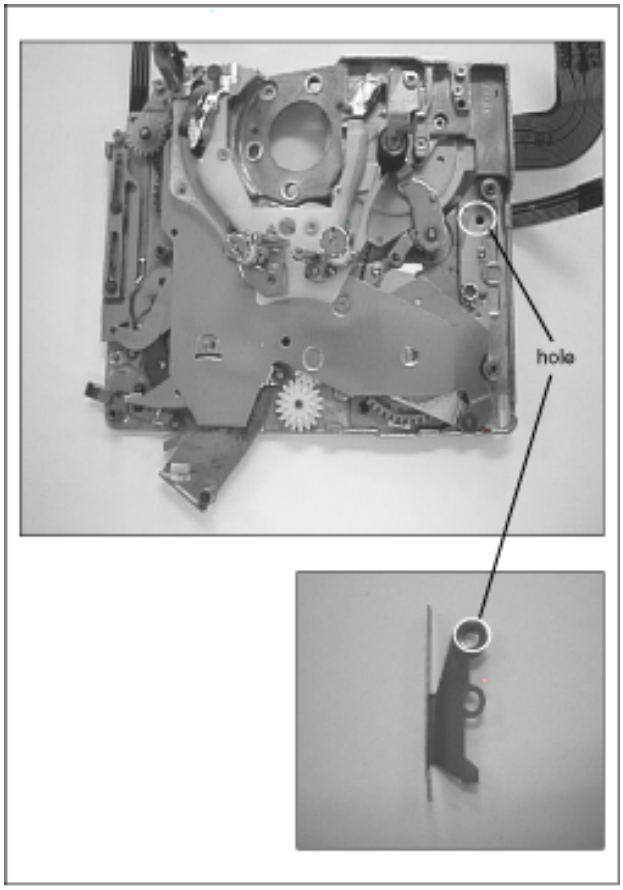


Fig. A2-2

MC-Service

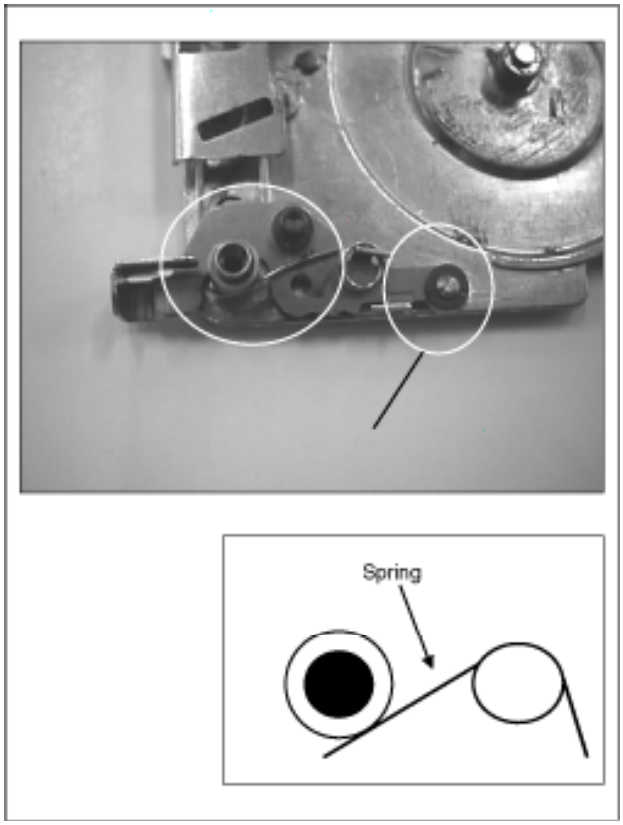


Fig. A2-3

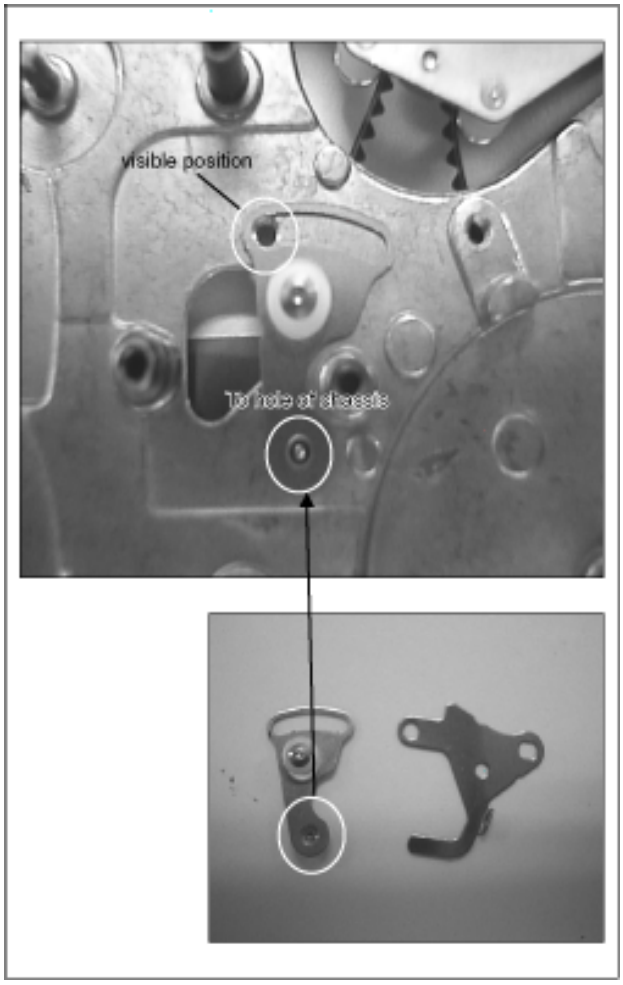


Fig. A2-4

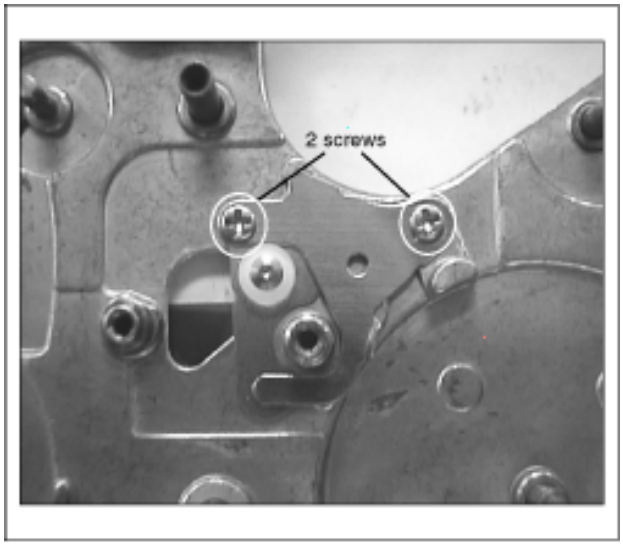


Fig. A3

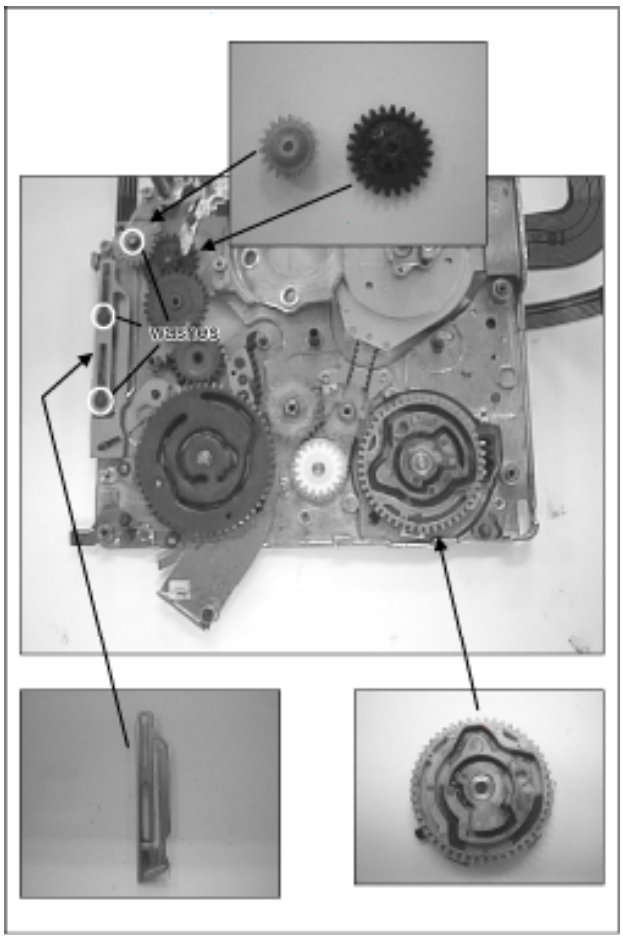


Fig. A4

MC-Service

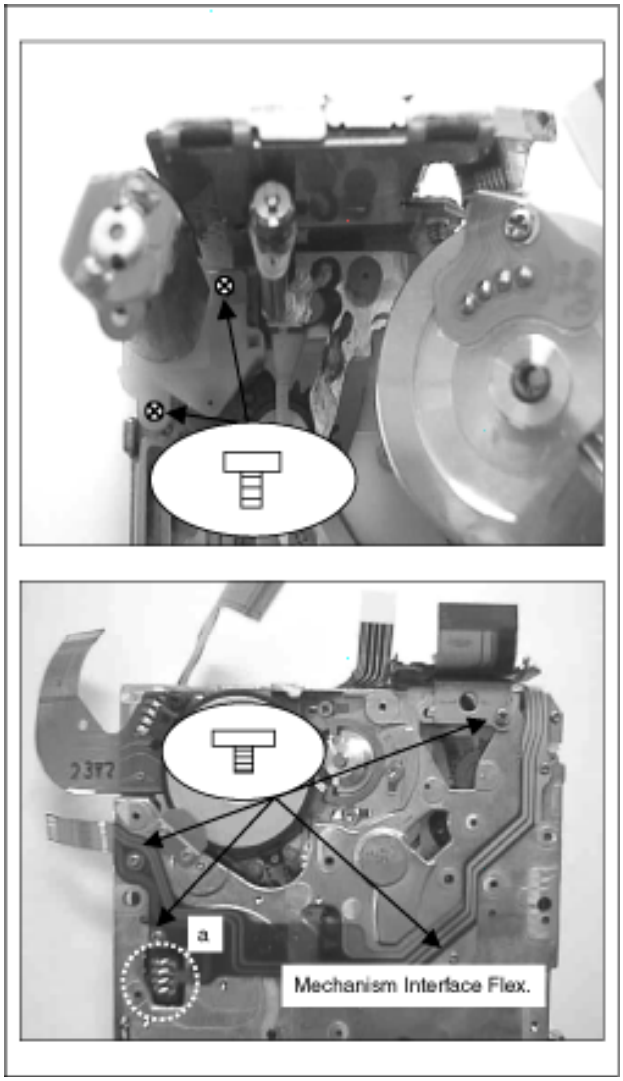


Fig. A5-1

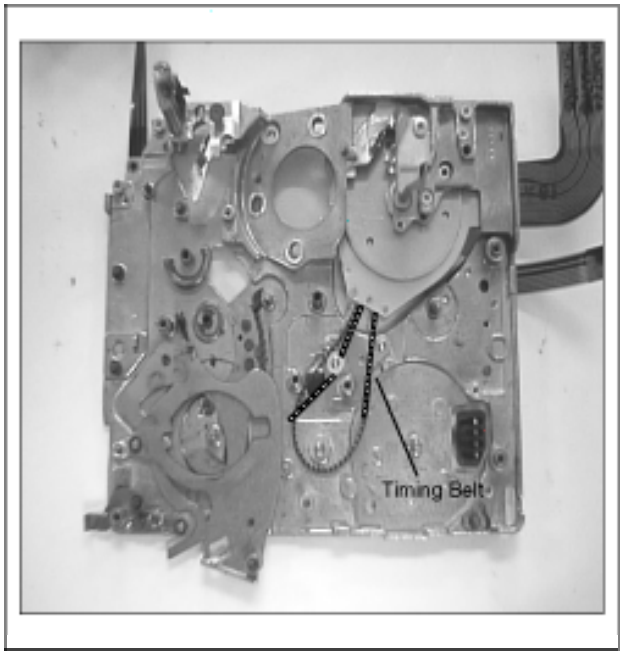


Fig. A5-2

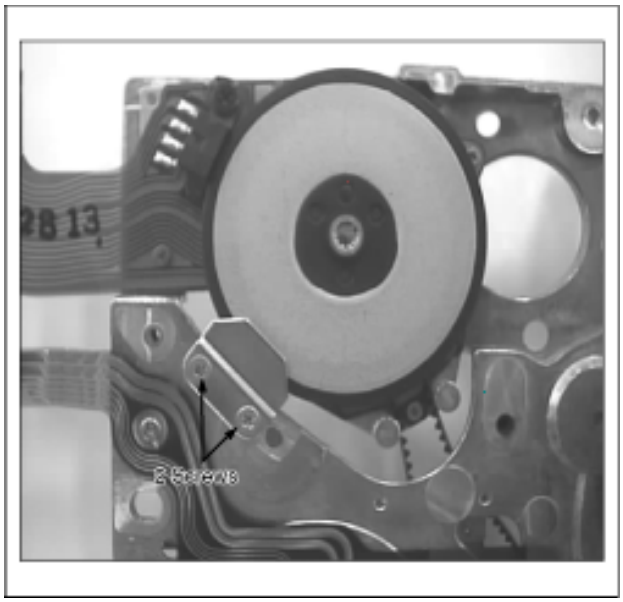


Fig. A6

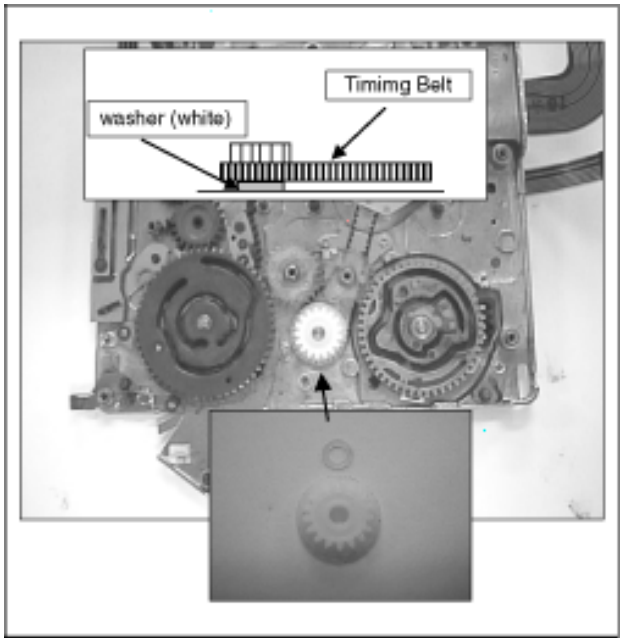


Fig. A7

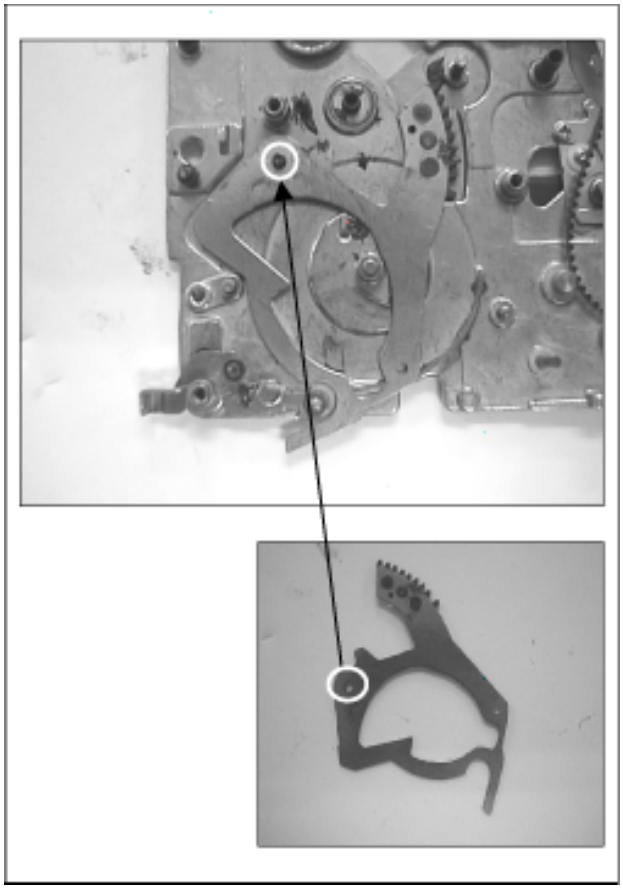


Fig. A8

MC-Service

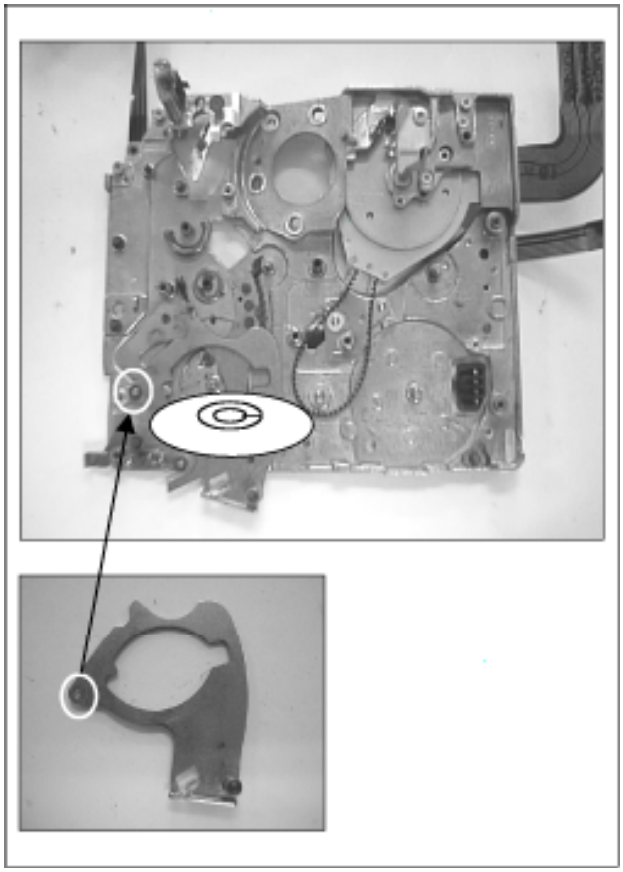


Fig. A9

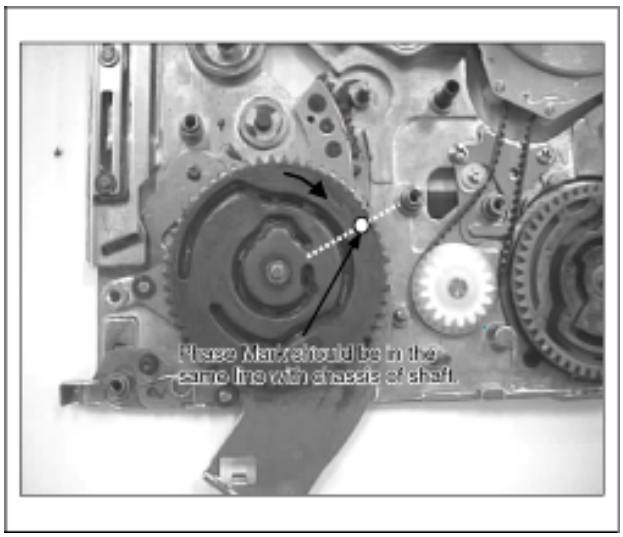


Fig. A10-1

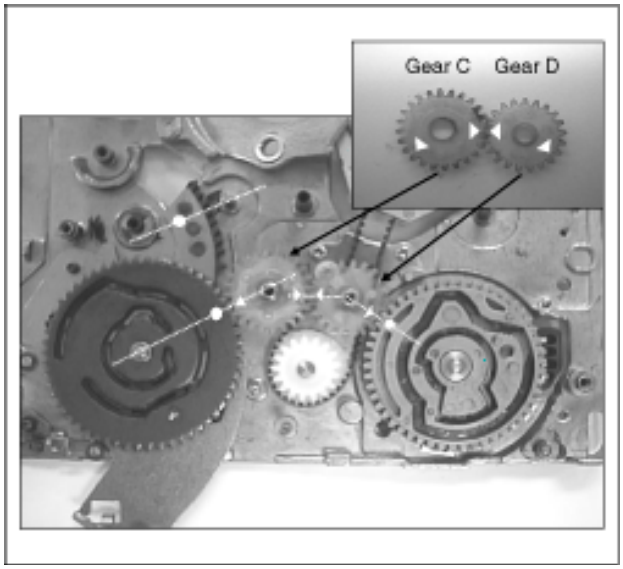


Fig. A10-2

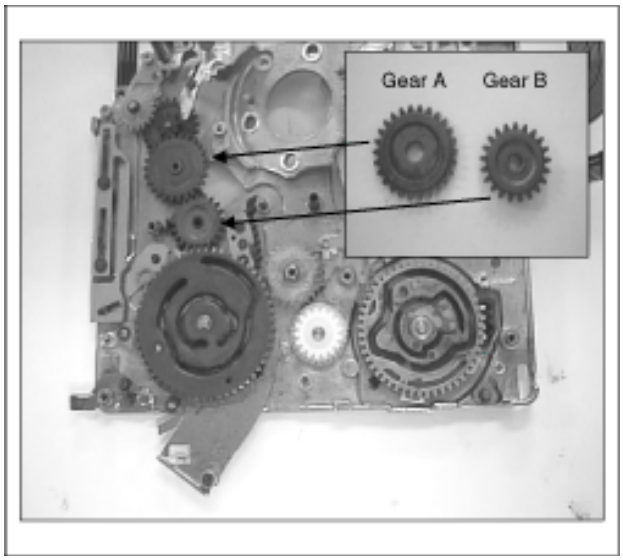


Fig. A11

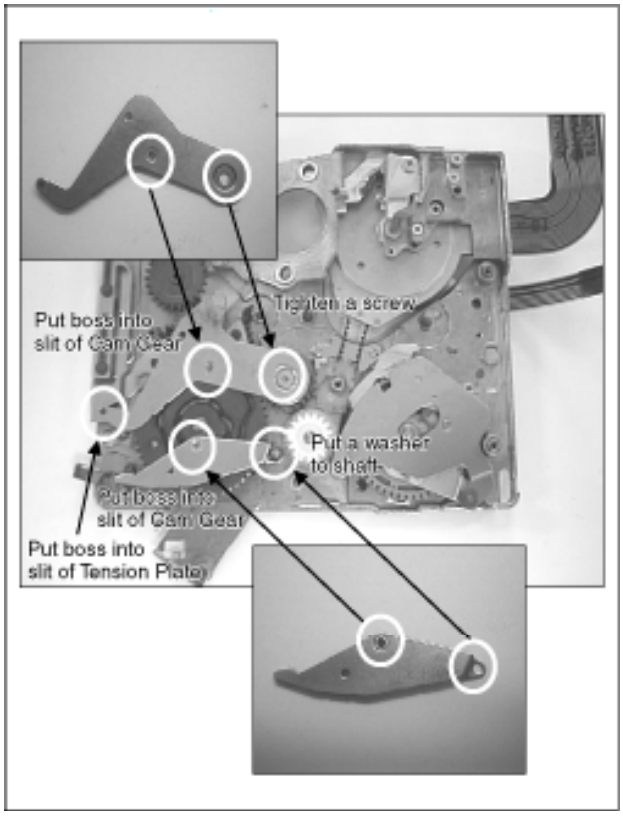

Put boss into slit of Cam Gear
Tighten a screw
Put a washer to shaft
Put boss into slit of Cam Gear
Put boss into slit of Tension Plate

Fig. A12

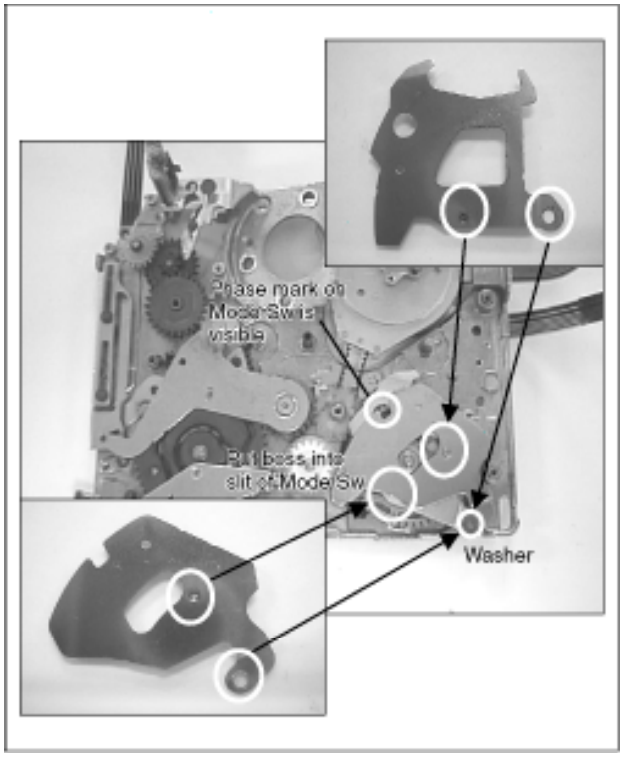


Fig. A13

MC-Service

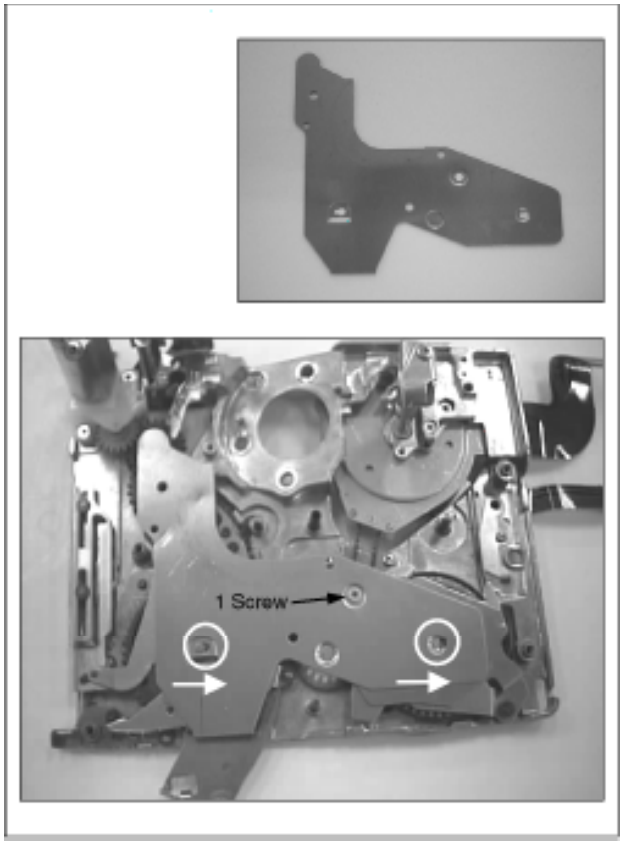


Fig. A14

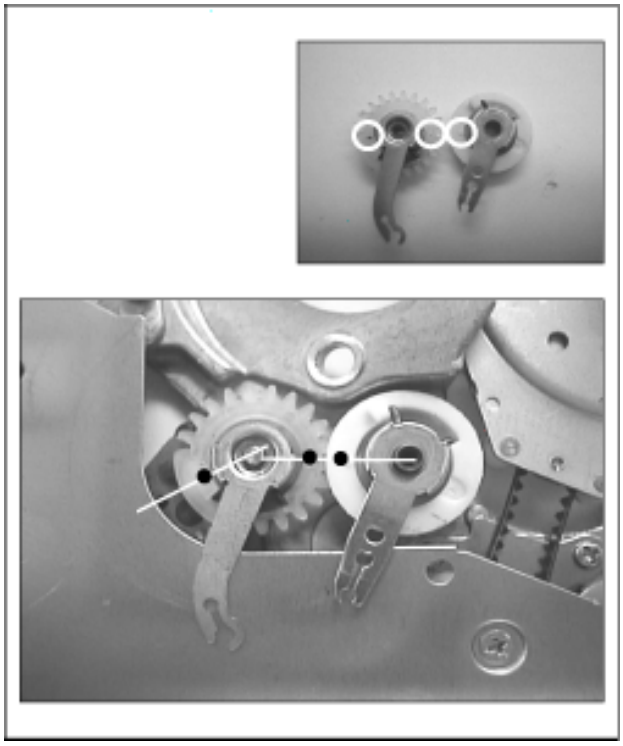


Fig. A15-1

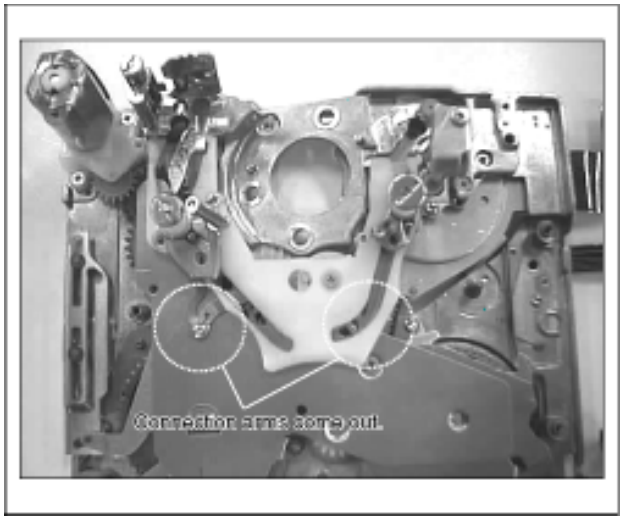


Fig. A15-2

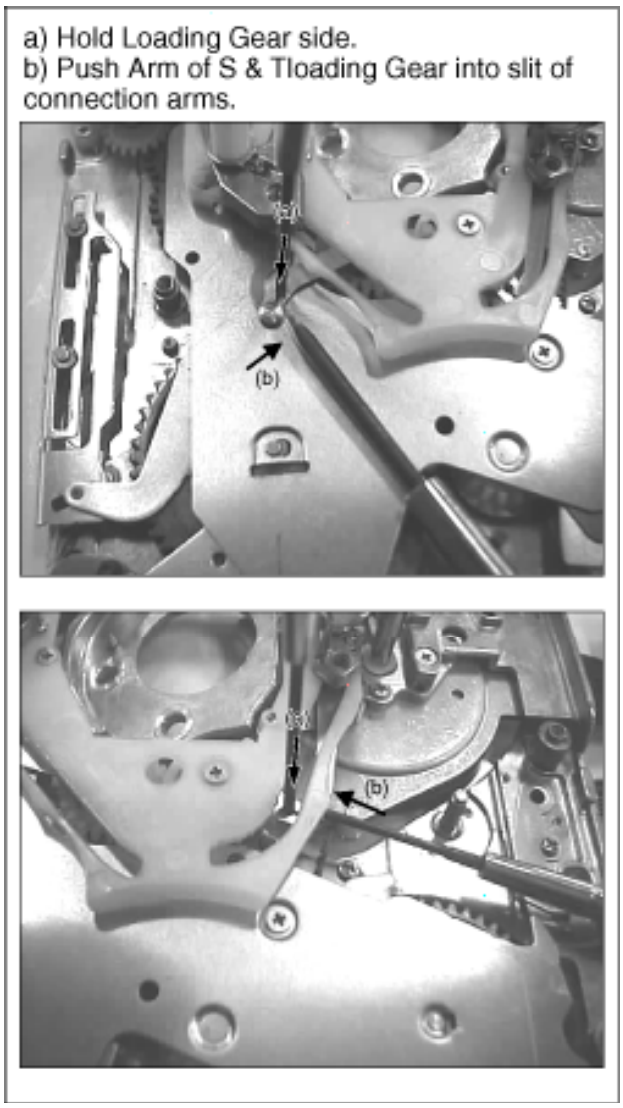

a) Hold Loading Gear side.
b) Push Arm of S & Tloading Gear into slit of connection arms.
(a)
(b)
(a)
(b)

Fig. A15-3

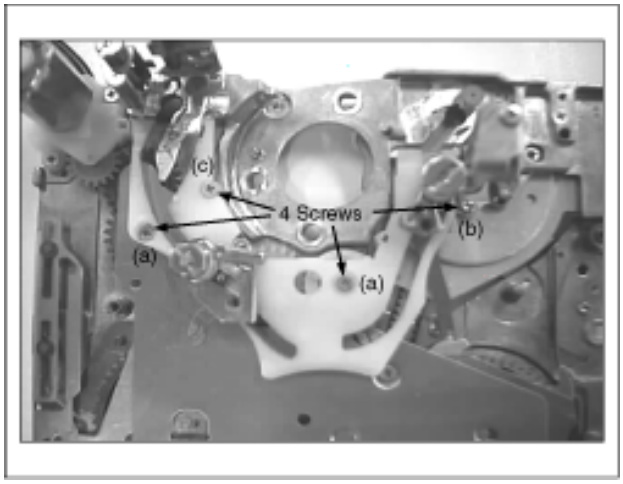

(c)
4 Screws
(b)
(a)
(a)

Fig. A16-1

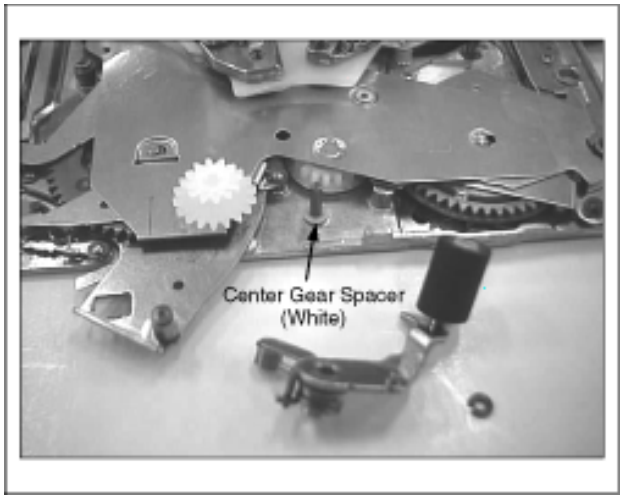


Fig. A16-2

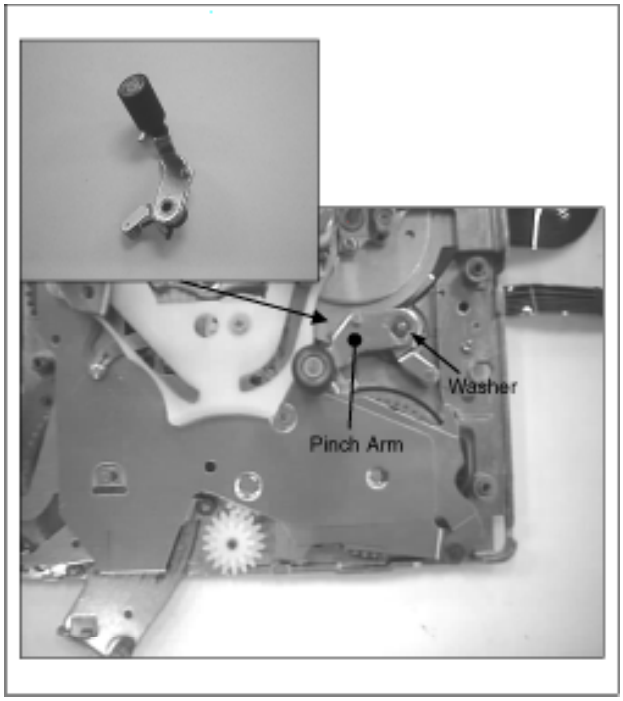


Fig. A17-1

Bottom Side of Take up

Fig. A17-2

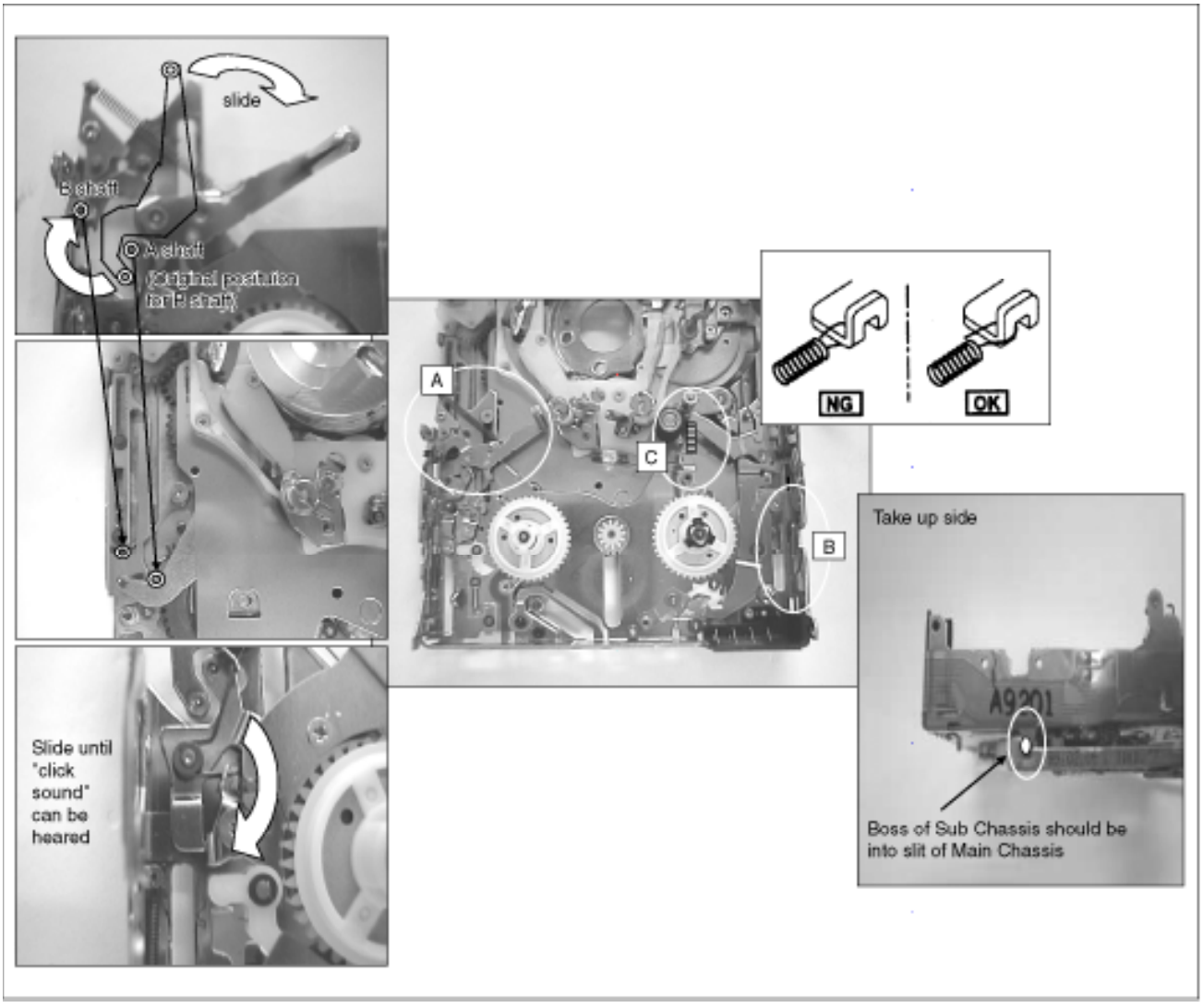

slide
B shaft
A shaft
(Original position for B shaft)
A
C
B
NG
OK
Take up side
A9201
Boss of Sub Chassis should be into slit of Main Chassis
Slide until "click sound" can be heared

Fig. A17-3

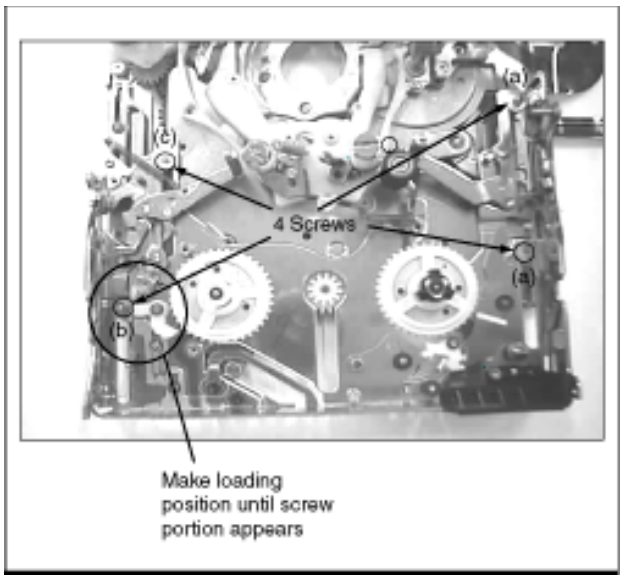


Fig. A17-4

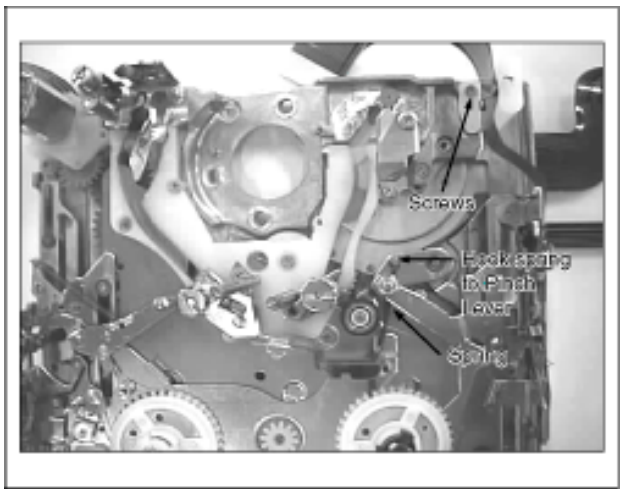


Fig. A18-1

MC-Service

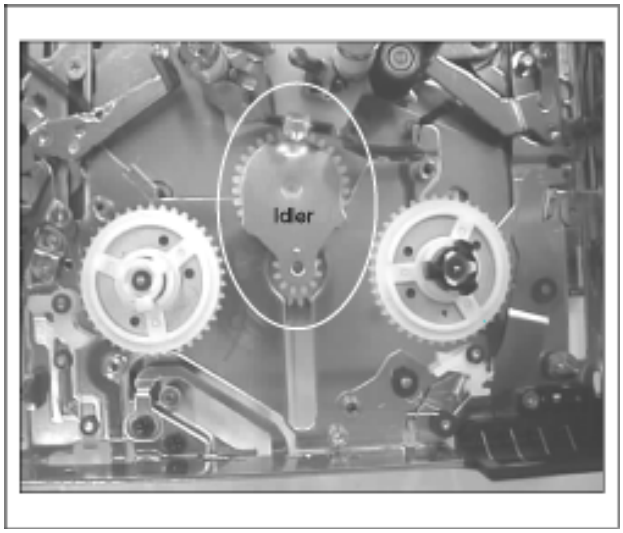


Fig. A18-2

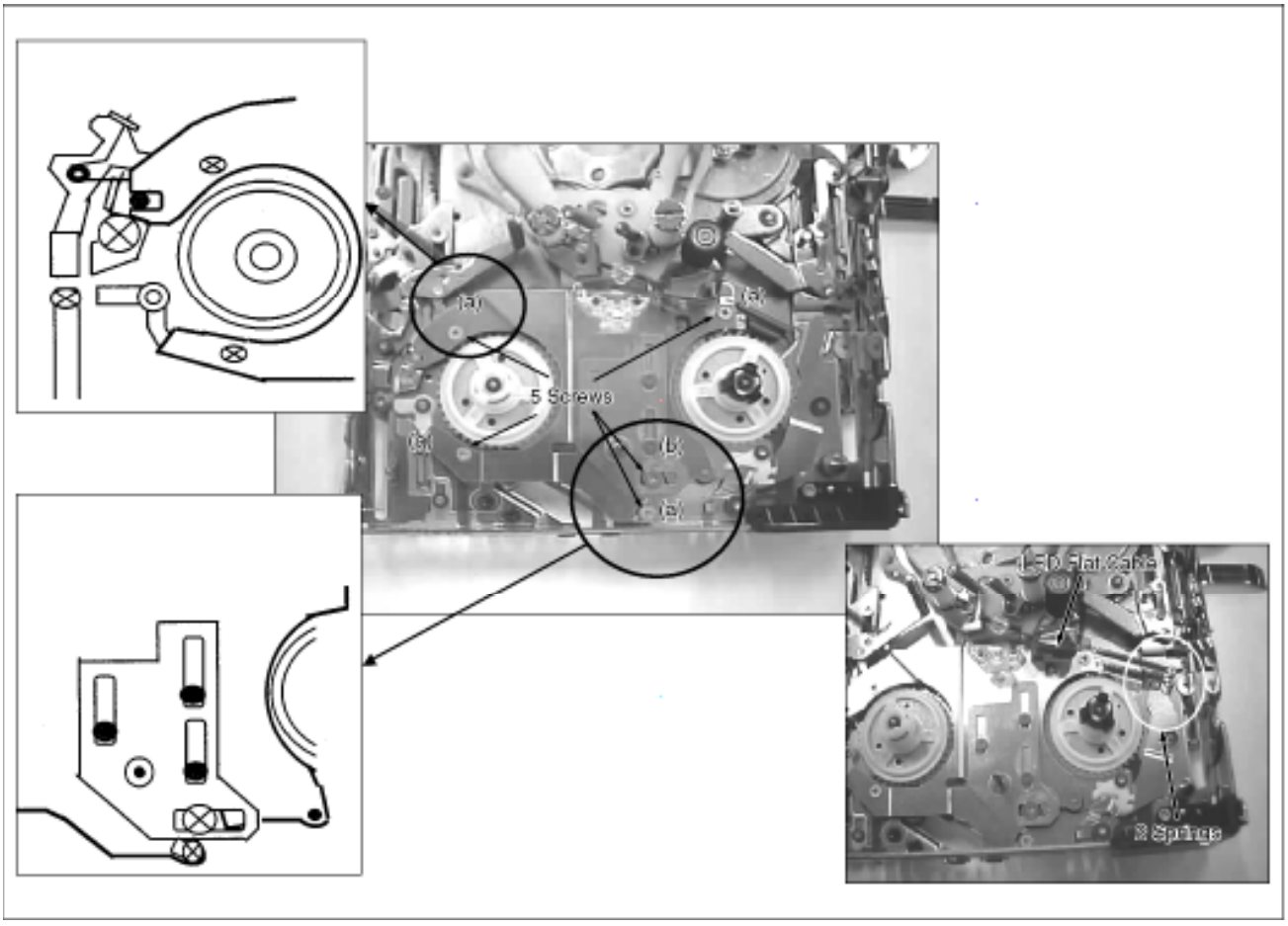


Fig. A18-3

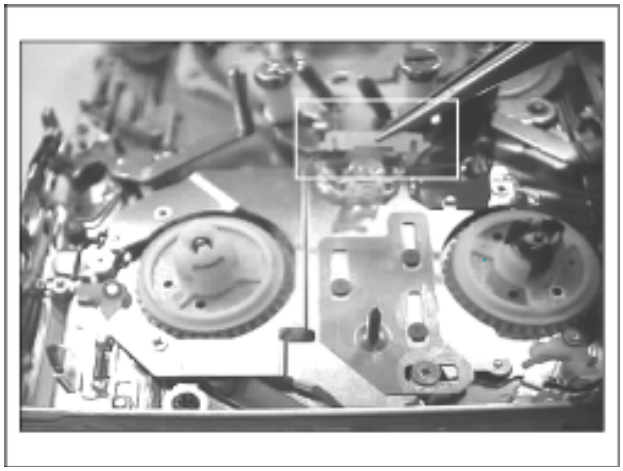


Fig. A19-1

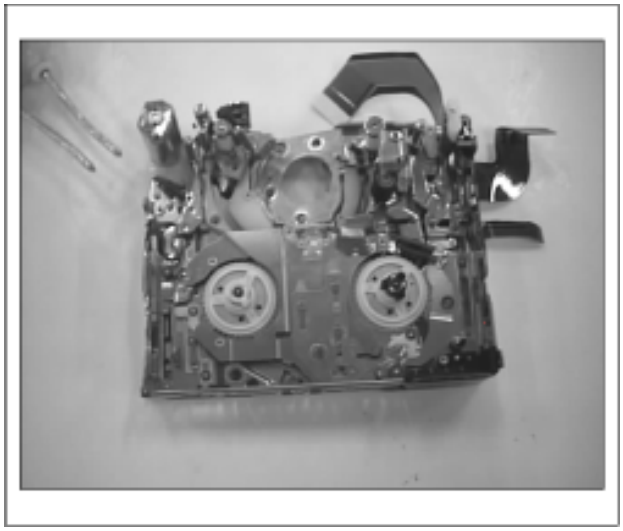


Fig. A19-2

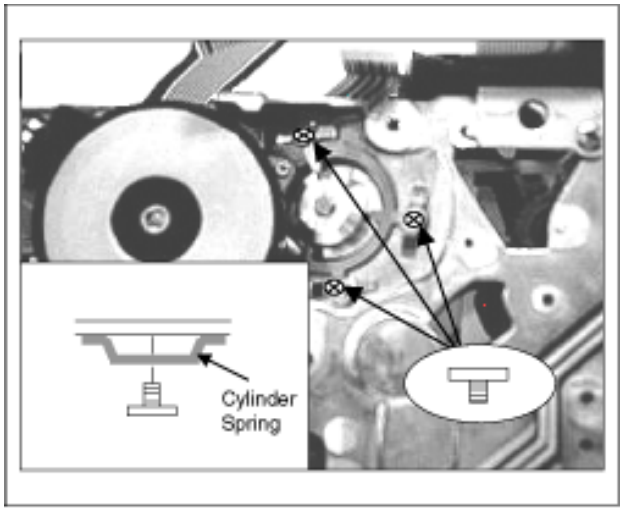


FIg. A19-3

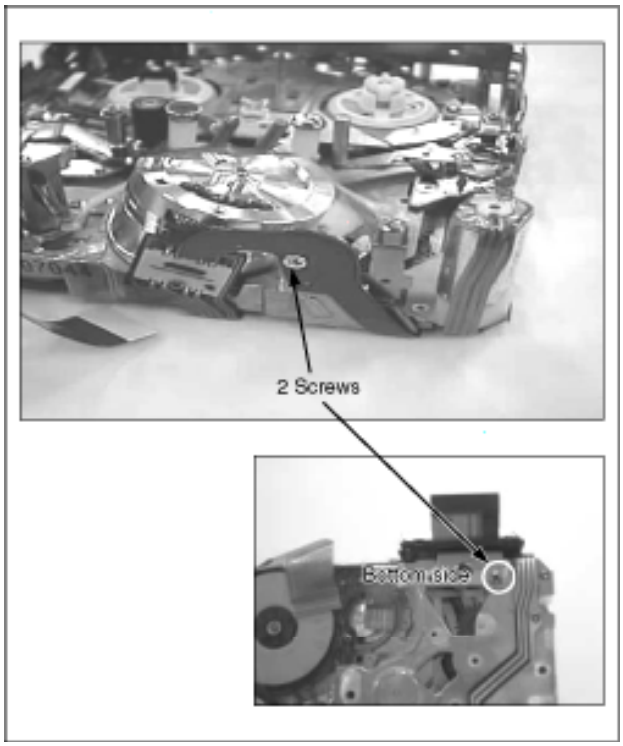


Fig. A20-1

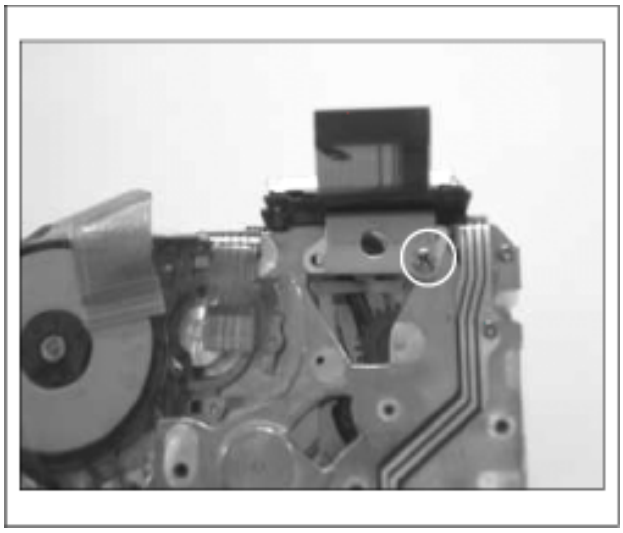


Fig. A20-2

MC-Service

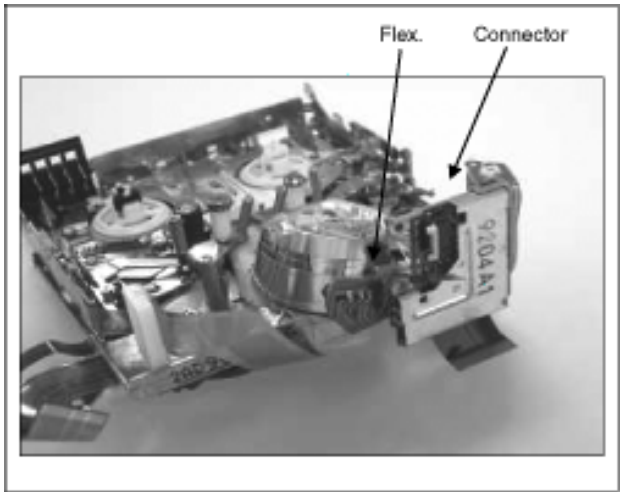


Fig. A20-3

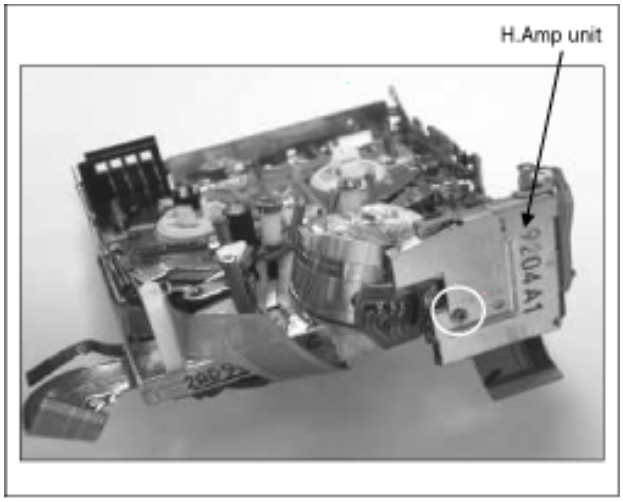


Fig. A21-1

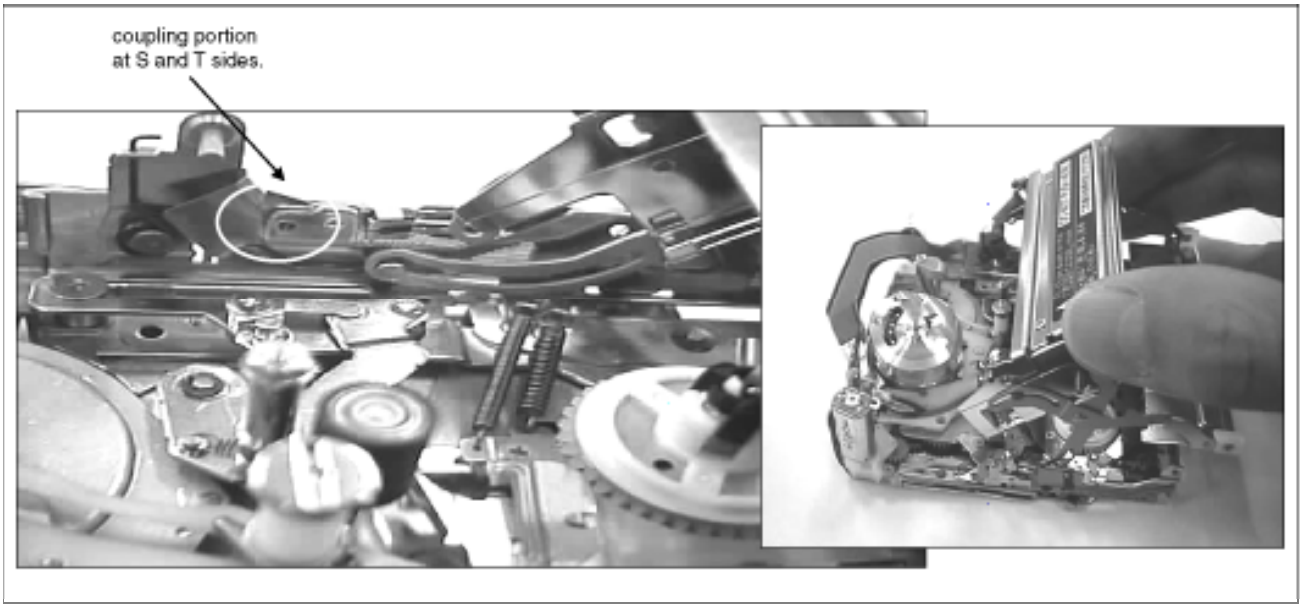


Fig. A21-2

TOP PREVIOUS NEXT

5.1 MECHANICAL ADJUST TABLE

TOP PREVIOUS NEXT

* 1) H.Amp Unit is applied only Q1 & Q2 mechanism.

No.	Item	Confirmation of Tape Running	Linearity Adjustment	Confirmation of B.E.R. Value	Capstan tilt Adjustment	S3 Base adjustment	Sub Chassis Adjustment
1	MECHANISM CHASSIS	--	--	•	--	--	--
2	Cassette Up Unit.	--	--	--	--	--	--
*3	H Amp Unit.	--	--	•	--	--	--
4	Cylinder Unit	•	•	•	--	--	--
5	RT Flex. Flame.	--	--	--	--	--	--
6	LED Holder	--	--	--	--	--	--
7	Cover Plate	--	--	--	--	--	--
8	Idler U.	--	--	•	--	--	--
9	Sub Chassis Unit	•	•	•	--	--	•
10	Pinch Arm	•	•	•	--	--	--
11	Center Gear	--	--	•	--	--	--
12	Rail Unit	•	•	•	--	--	--
13	S-Loading Gear	--	--	•	--	--	--
14	T-Loading Gear	--	--	•	--	--	--
15	Gear Cover	--	--	•	--	--	--
16	Pinch Beetle	--	--	•	--	--	--
17	Release Beetle	--	--	•	--	--	--
18	Tension Lever	•	•	•	--	--	--
19	Eject Arm	--	--	--	--	--	--
20	Interface Gears	--	--	•	--	--	--
21	Cam Gear	--	--	•	--	--	--
22	Chassis Radon	--	--	--	--	--	--
23	Boat Radon	--	--	--	--	--	--
24	Drive Gear	--	--	•	--	--	--
25	Capstan Holder	--	--	--	--	--	--
26	Capstan Motor	•	•	•	•	--	--
27	Loading Motor Unit	--	--	--	--	--	--

MC-Service

28	Mechanism Interface Flex.	--	--	--	--	--	--
29	Mode Switch	--	--	--	--	--	--
30	Deceleration Gears	--	--	•	--	--	--
31	Tension Plate	•	•	•	--	--	--
32	T4 Guide	--	--	--	--	--	--
33	Eject Lever	--	--	--	--	--	--
34	Pulley Cover	--	--	--	--	--	--
35	Pulley	--	--	--	--	--	--
36	S3 Base U.	•	•	•	--	•	--

TOP PREVIOUS NEXT

5.2 MECHANICAL ADJUSTMENT PROCEDURE

TOP PREVIOUS NEXT

No.	Item	Equipment	Fig.	Procedure
1	Confirmation of Tape Running	1. Alignment Tape (PAL: VFM3110EDS/NTSC: VFM3010EDS) 2. Post Adjustment Driver(VFK1278)	Fig. AD1-1	1) Confirm each post position in playback mode.
			Fig. AD1-2	2) Confirm condition of tape regulation in playback & review mode.
2	Linearity Adjustment	1.Tatsujin system(Refer to Fig.)	Fig. AD2-1	1) Set up Tatsujin System.
		2. Alignment Tape (PAL: VFM3110EDS/NTSC: VFM3010EDS) 3. Envelope Detecor Board (VFK1641) 4. Post Adjustment Driver (VFK1278)	Fig. AD2-2	2) Connect Envelope Detector Board between Measuring Board & Oscilloscope.
			--	3) Remove Adjustment Cover. * Location for Adjustment Cover depends on Models.
			Fig. AD2-3	4) Playback the Alignment Tape and adjust S2 & T3 posts by Screw Driver until wavefom becomes flat. After adjustment, B.E.R. should be confirmed by Electrial adjustment on the "Tatsujin".
3	Confirmation of B.E.R. Value	1.Tatsujin system(Refer to Fig.)	Fig. AD2-1	1) Refer to Electrical Adjustment on the "Tatsujin".
4	Capstan tilt Adjustment	1. Capstan Tilt Adj. Jig(VFK1638) 2. Small Phillips Screw Driver	Fig. AD4-1	1) Slide sensor pin to Capstan shaft. After touching,if OK, LED should be lit. * Do not touch when you confirm LED lit or not.
			Fig. AD4-2	2) If Ng, Capstan tilt should be adjusted. a) Tighten screw (A) until LED is lit. b) Loose screw (B) until LED is not lit. c)Tightenscrew (A) unti-clockwise until LED is lit .
5	S3 Base adjustment	1. Post Adjustment Driver(VFK1278)	Fig. AD5-1	1) Adjust S3 screw as Evvelope becomes flat.
			Fig. AD5-2	2) Tighten a screw 180 degree as "ENV 1". 3) Loosen a screw as ENV 2. 4) Tighten a screw until ENV becomes flat as ENV 3 and tighten a screw 180 degree again.
6	Sub Chassis Adjustment	1. Small Phillips Screw Driver	Fig. AD6-1	1) Make Review Position. * Set Loading mode and then,stop Pinch Roller & Capstan shaft is touched.

			Fig. AD6-2	2) Loosen a screw. After fixing a shaky Sub Chassis,then tighten a screw.

Fig. AD1-1

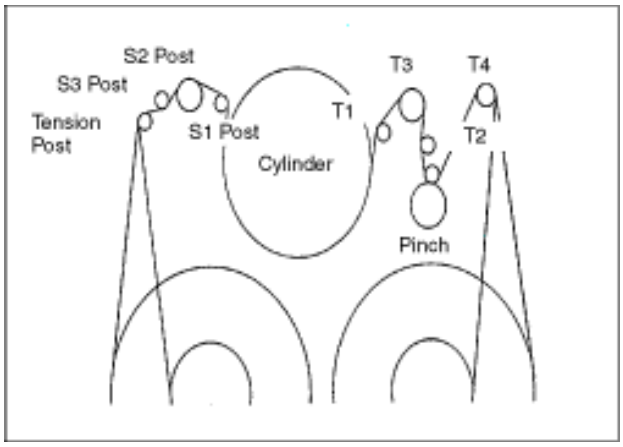


Fig. AD1-2

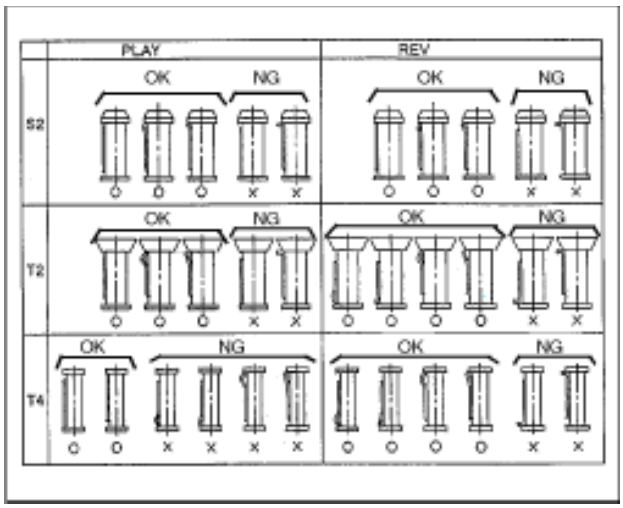


Fig. AD2-1

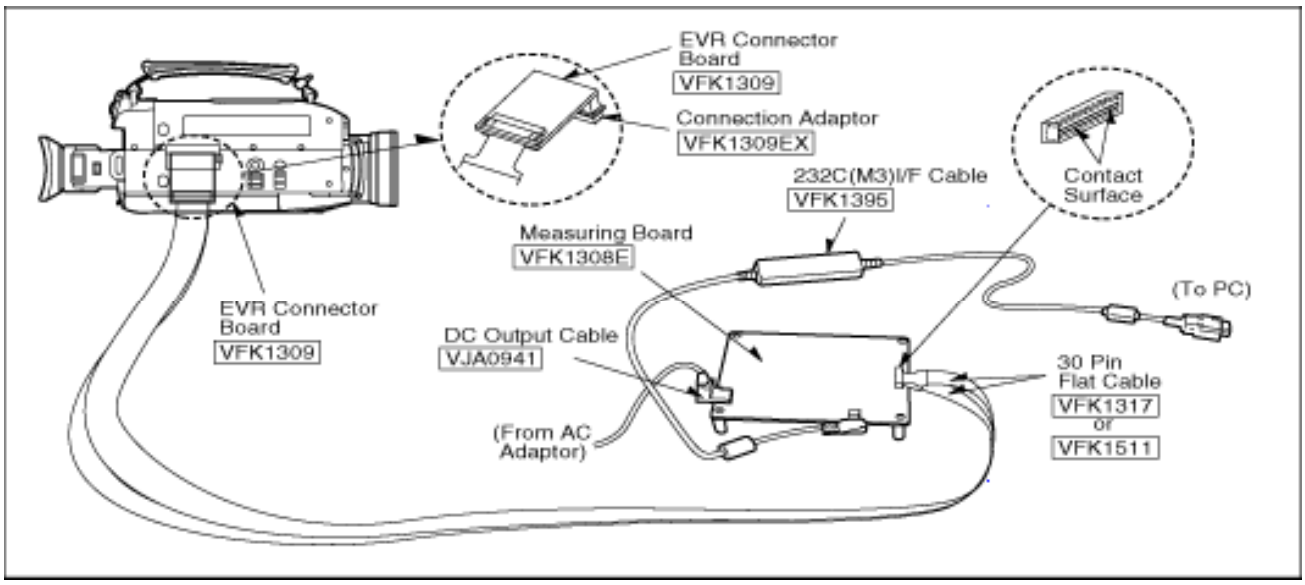


Fig. AD2-2

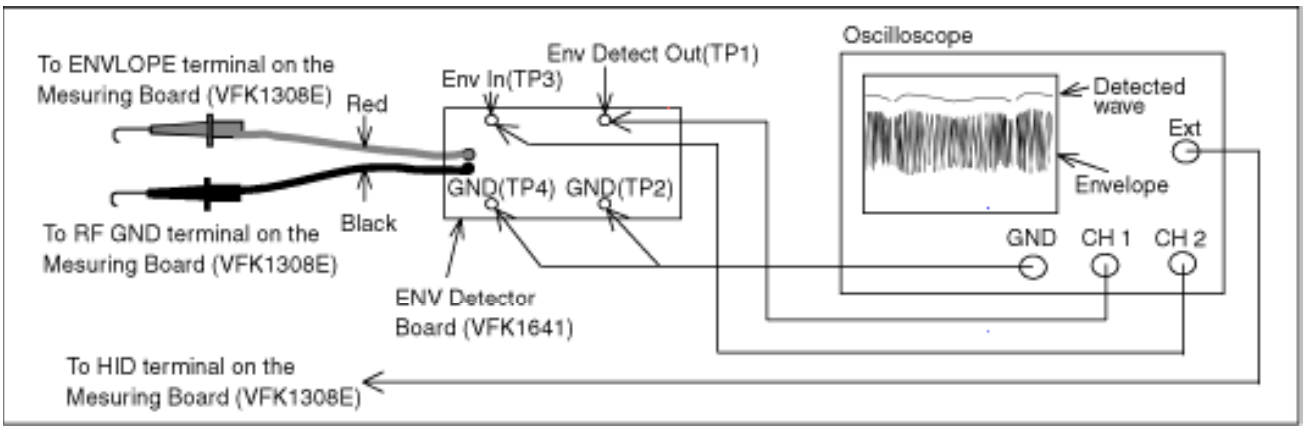


Fig. AD2-3

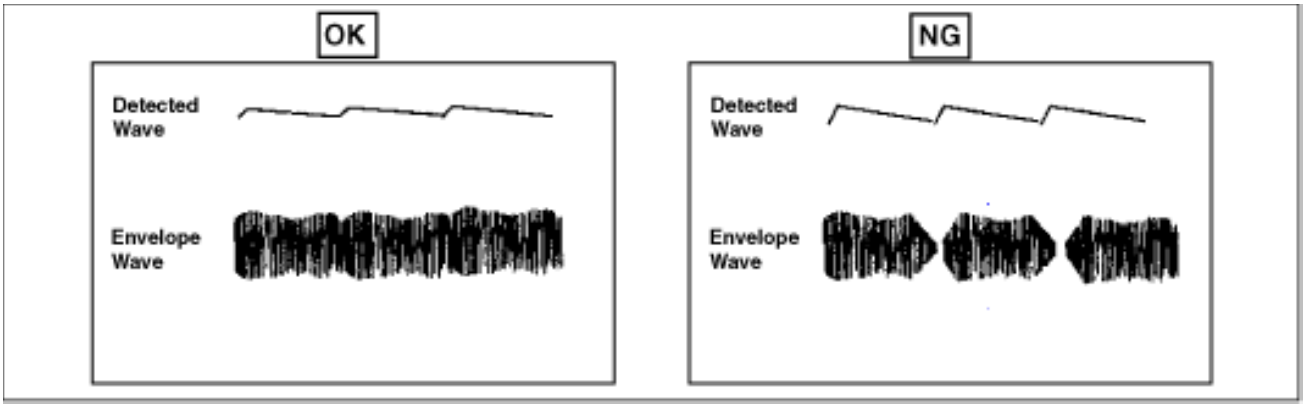


Fig. AD4-1

Fig. AD4-2

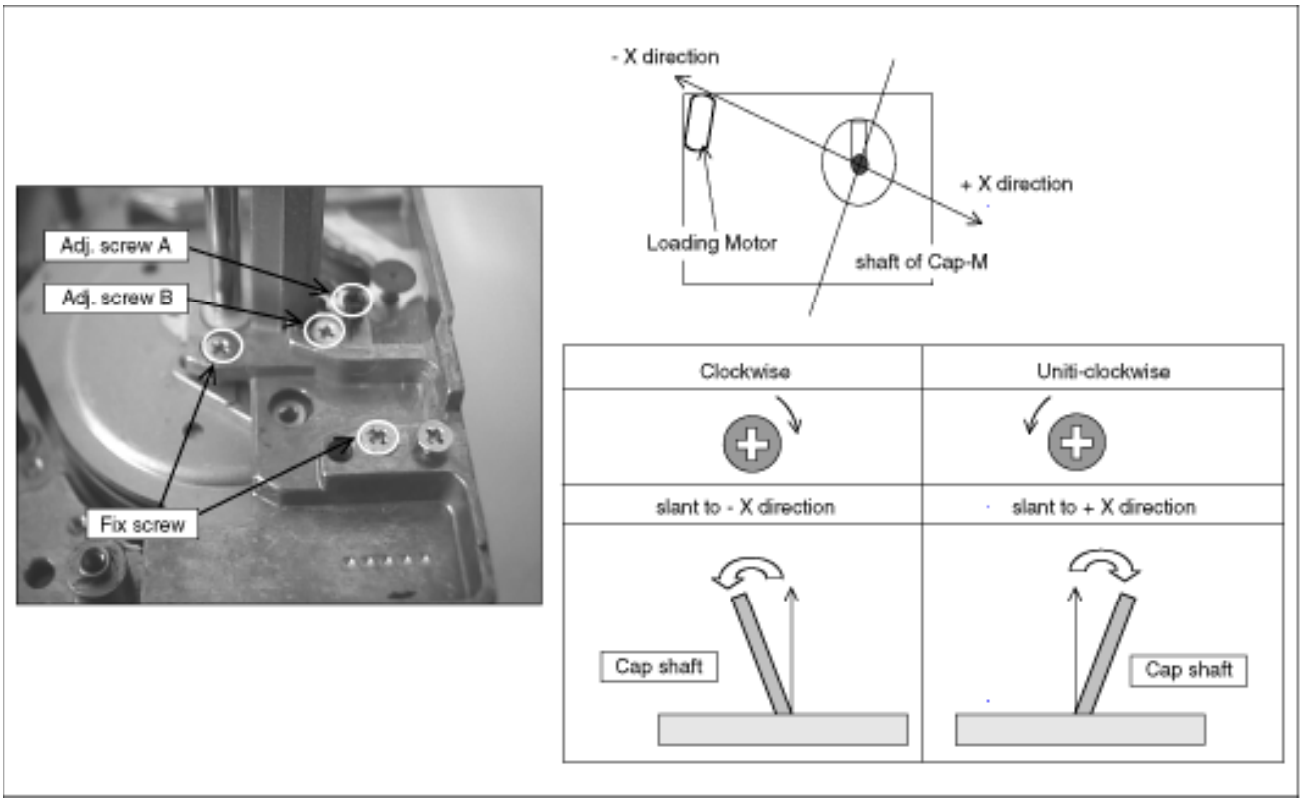


Fig. AD5-1

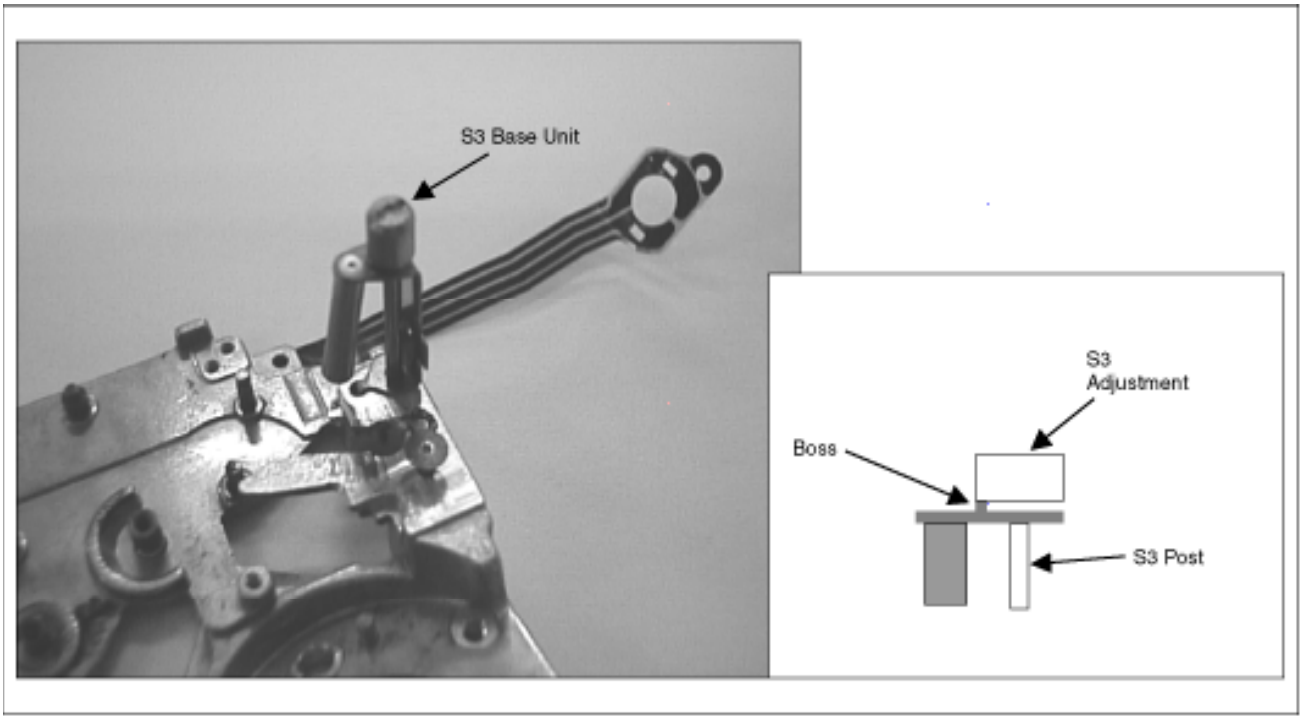


Fig. AD5-2

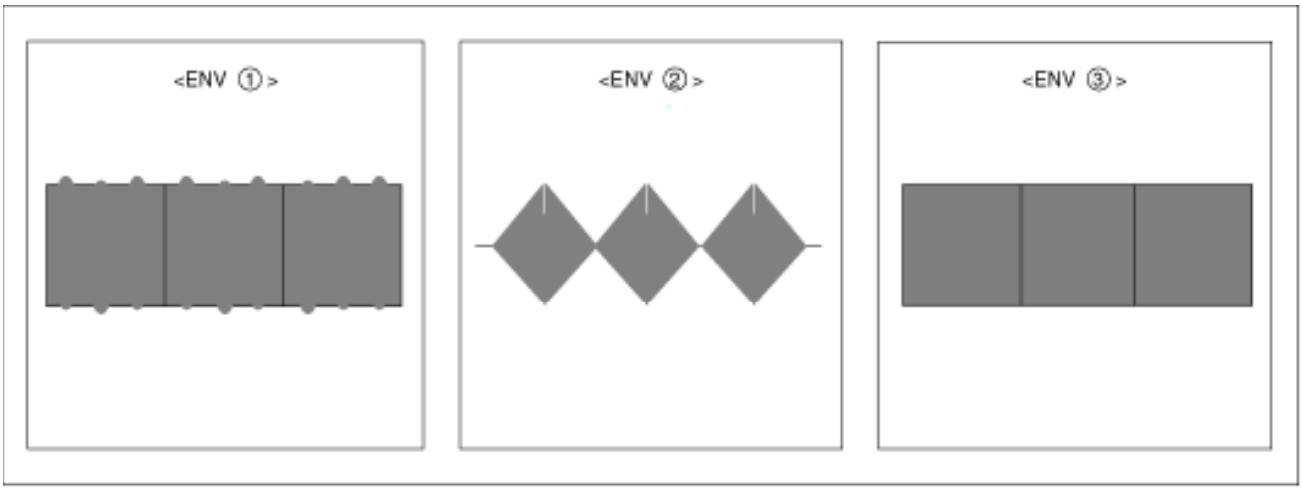


Fig. AD6-1

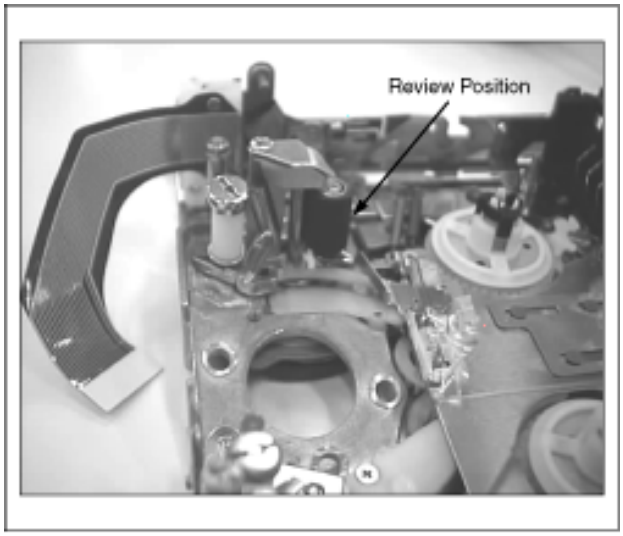
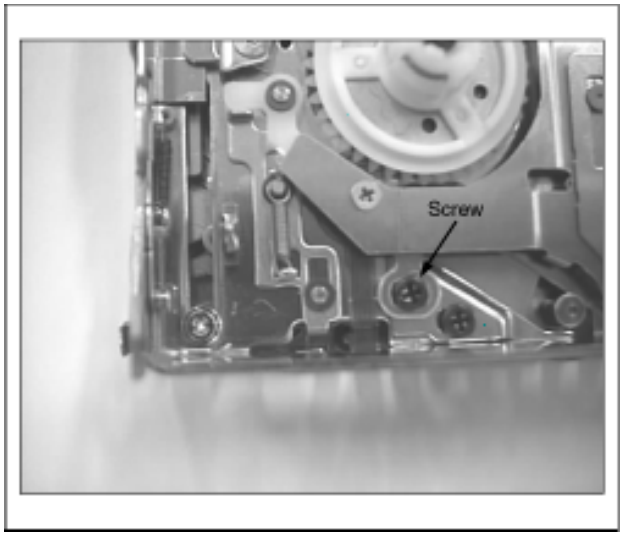


Fig. AD6-2



TOP PREVIOUS NEXT

6.1 Q1& Q2 VCR MECHANISM SECTON (1)

TOP PREVIOUS NEXT

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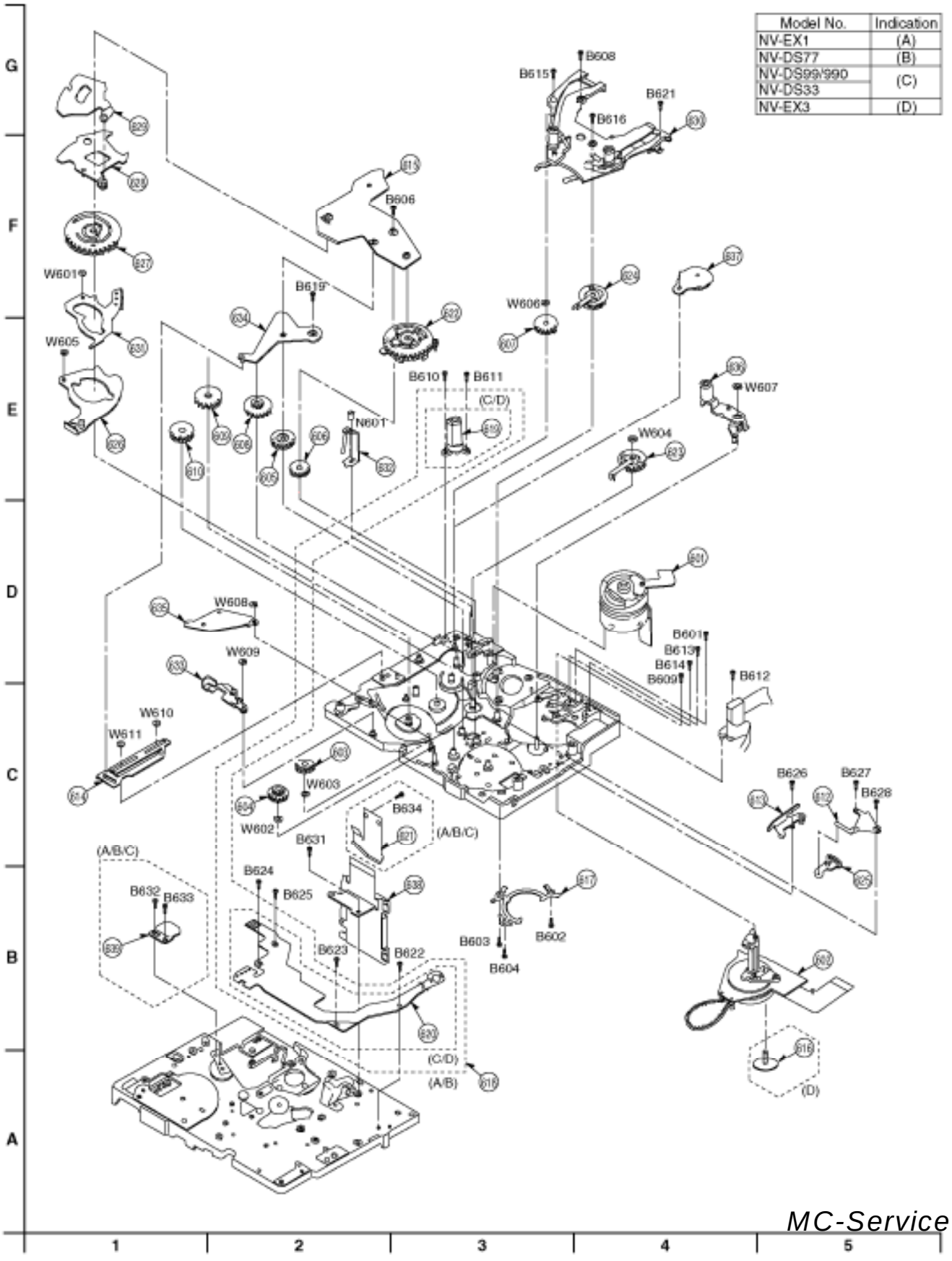
Model No. | Indication
NV-EX1 | (A)
NV-DS77 | (B)
NV-DS99/990 | (C)
NV-DS33 | (C)
NV-EX3 | (D)
B608
B615
B621
B616
B606
B619
W601
W605
W606
W607
B610
B611
(C/D)
N601
W604
W608
W609
W610
W611
W603
W602
B634
(A/B/C)
B631
B624
B625
B632
B633
B623
B622
B603
B602
B604
B601
B613
B614
B609
B612
B626
B627
B628
(C/D)
(A/B)
(D)
G
F
E
D
C
B
A
1
2
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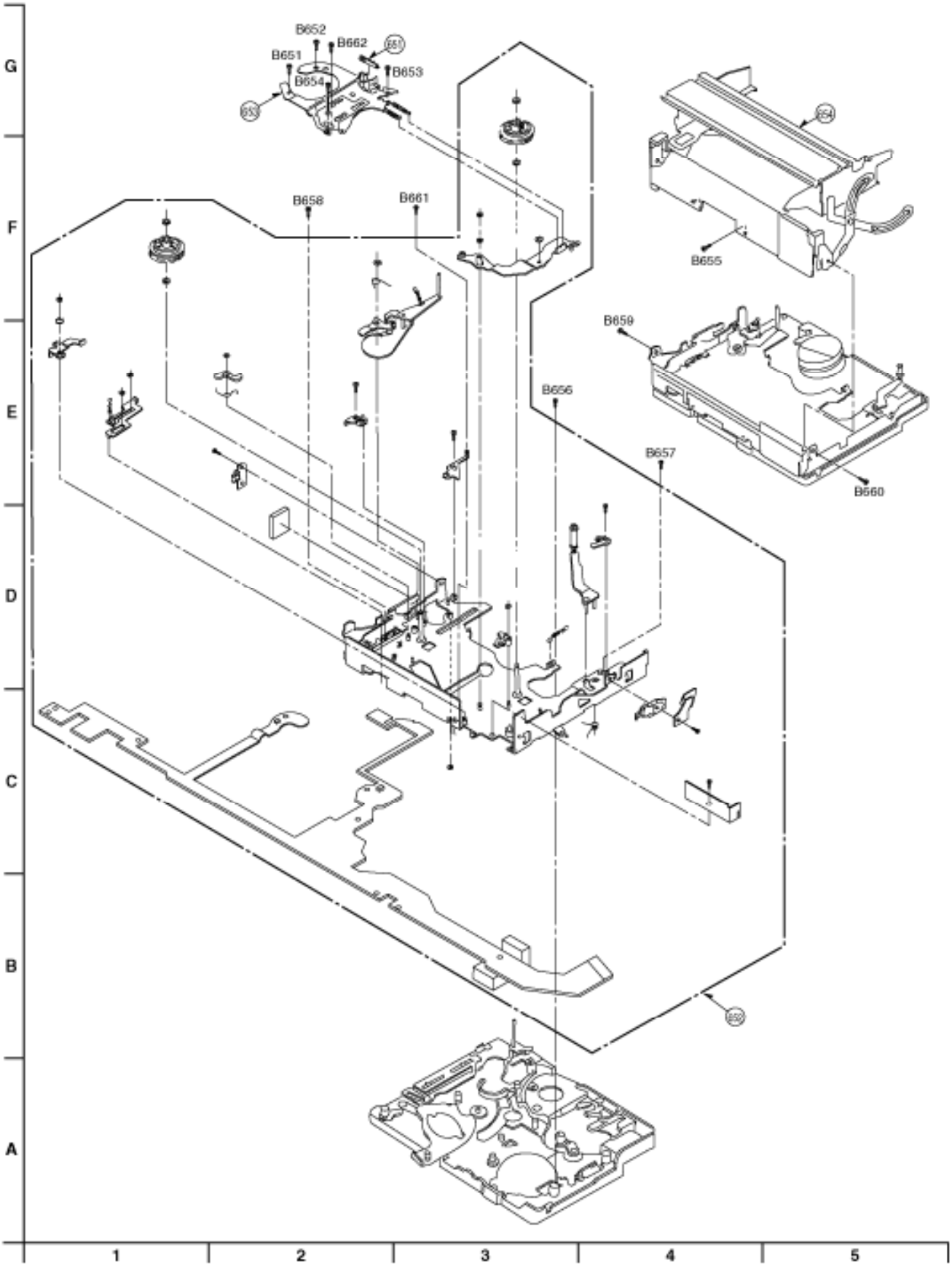
4
5

MC-Service

6.2 Q1& Q2 VCR MECHANISM SECTION (2)

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT


B652
B662
B651
B653
B654
B658
B661
B655
B650
B656
B657
B660
G
F
E
D
C
B
A
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5

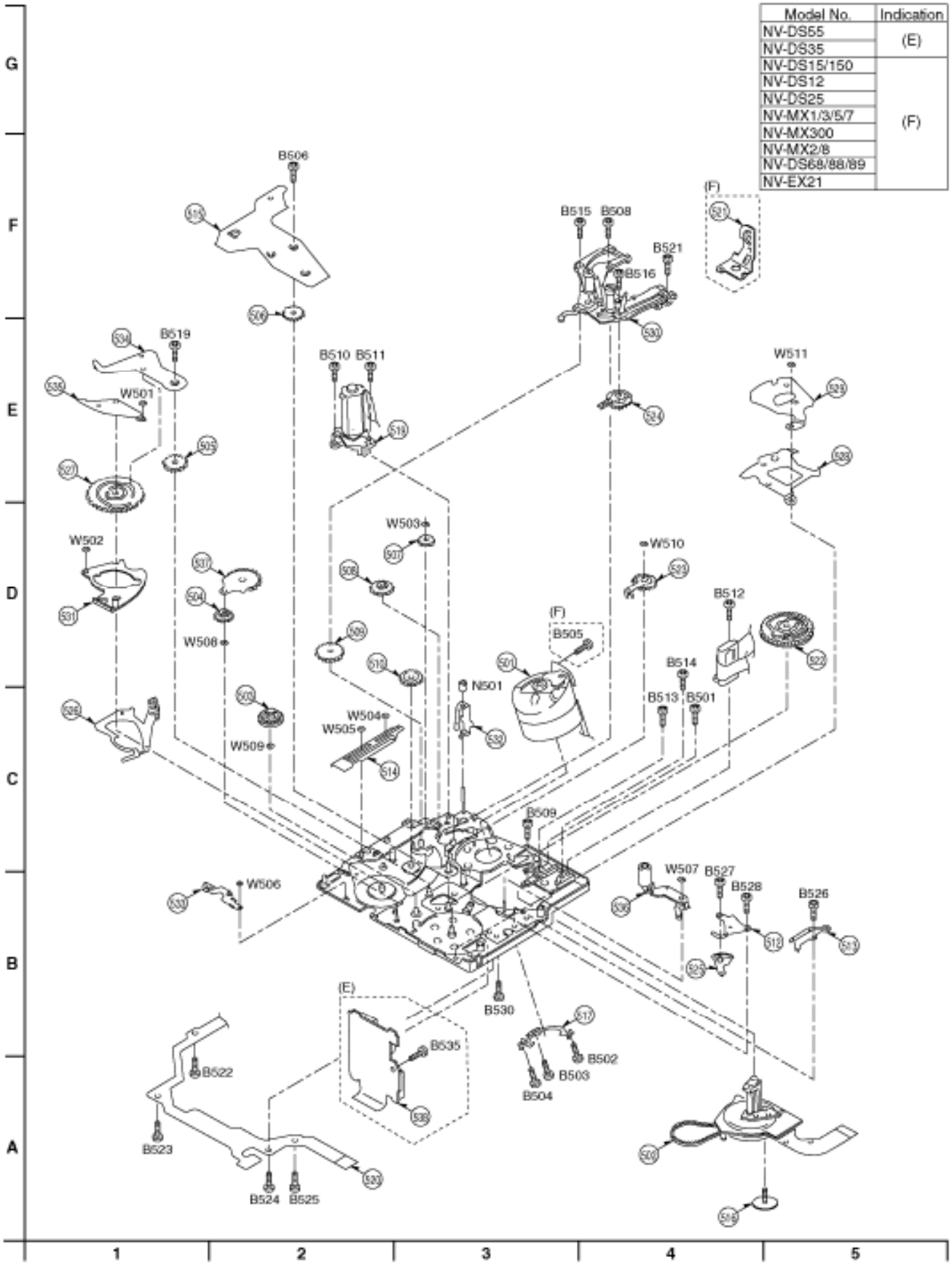
6.3 Q3 VCR MECHANISM SECTION (1)

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

MC-Service

Model No.	Indication
NV-DS55	(E)
NV-DS35	
NV-DS15/150	(F)
NV-DS12	
NV-DS25	
NV-MX1/3/5/7	
NV-MX300	
NV-MX2/8	
NV-DS68/88/89	
NV-EX21	



6.4 Q3 VCR MECHANISM SECTION (2)

TOP PREVIOUS NEXT

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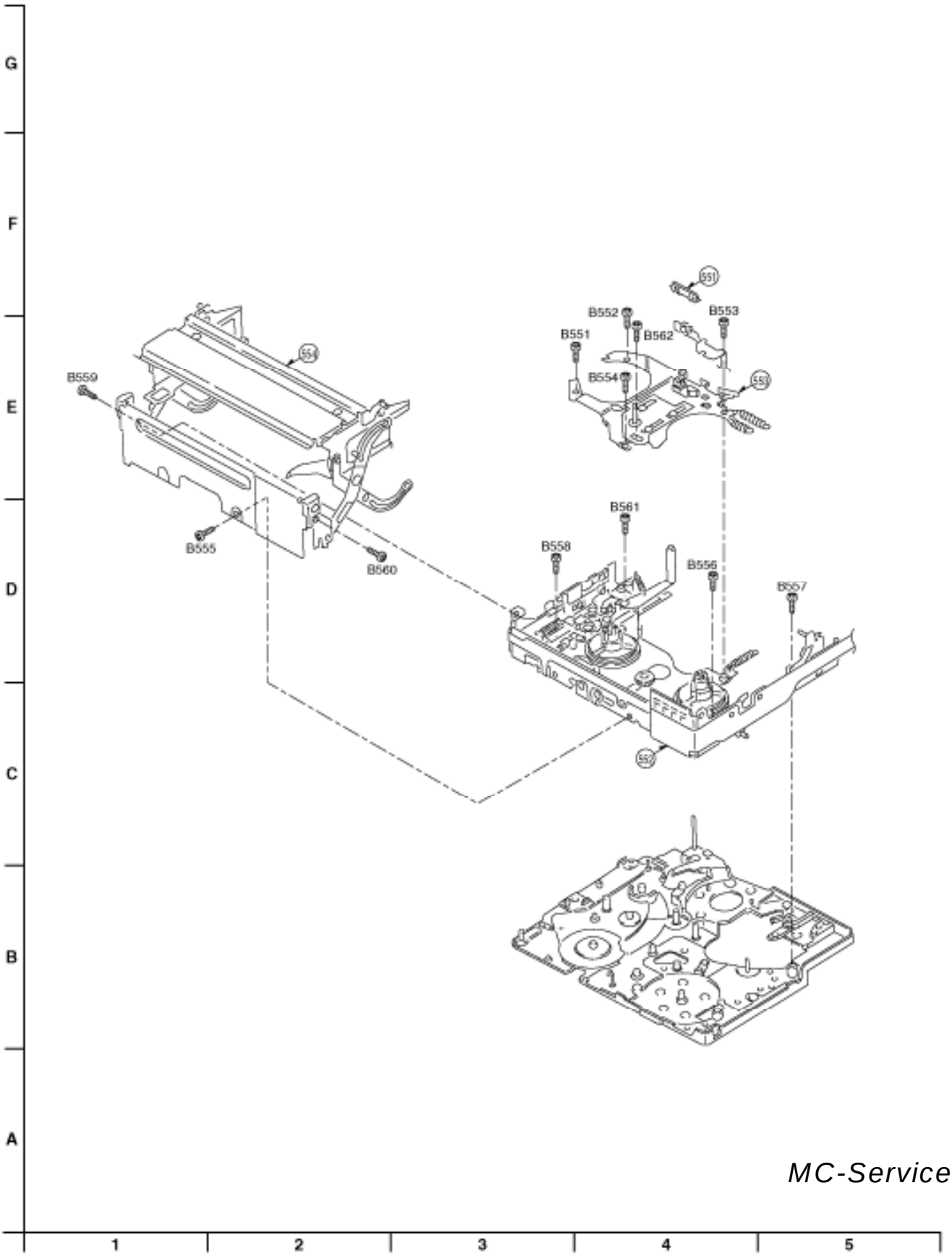
G
F
E
D
C
B
A
1
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B551
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MC-Service

7.1 Q1& Q2 VCR MECHANISM SECTION
(1) PARTS LIST

TOP PREVIOUS NEXT

Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark: △ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
601	VEG1495	CYLINDER U.	
602	DFX25A7VWB	CAPSTAN U.	
603	VDG1284	DRIVE GEAR	
604	VDG1285	CENTER GEAR	
605	VDG1290	INTERFACE GEAR (C)	
606	VDG1291	INTERFACE GEAR (D)	
607	VDG1295	DECELERATION (A)	NV-EX1,NV-DS77
607	VDG1330	DECELERATION (A)	NV-DS99/990,NV-DS33,NV-EX3
608	VDG1296	DECELERATION (B)	NV-EX1,NV-DS77
608	VDG1331	DECELERATION (B)	NV-DS99/990,NV-DS33,NV-EX3
609	VDG1297	INTERFACE GEAR (A)	
610	VDG1303-A	INTERFACE GEAR (B)	
612	VMA9908	PULLEY COVER	
613	VMA9916	T4 GUIDE	
614	VMA9917	TENSION PLATE	
615	VMA0E52	GEAR COVER	
616	VHD1430	CAPSTAN HOLDER	NV-EX3
617	VMC1443	CYLINDER SPRING	
618	L6DA8DKC0001	LOADING MOTOR U.	NV-EX1,NV-DS77
619	VEM0679	LOADING MOTOR U.	NV-DS99/990,NV-DS33,NV-EX3
620	VWJ1297	MECHANISM INTERFACE FLEX.	NV-DS99/990,NV-DS33,NV-EX3
622	K0ZZ00000453	MODE SWITCH	
623	VXA6124	S LOAD GEAR U.	
624	VXA6125	T LOAD GEAR U.	

625	VXA6133	PULLEY COVER	
626	VXA6134	CHASSIS RADON U.	
627	VXA6135	CAM GEAR U.	
628	VXA6136	PINCH BEETLE	
629	VXA6137	RELEASE BEETLE	
630	VXA6138	RAIL U.	
631	VXA6169	BOAT RADON U.	
632	VXA6184	S3 BASE U.	
633	VXL2814	EJECT LEVER U.	
634	VXL2815	TENSION LEVER U.	
635	VXL2816	EJECT ARM U.	
636	VXL2897	PINCH ARM U.	
637	VXL2818	IDLER U.	
638	VYK8485	HEAD AMP U.	NV-EX1
638	VYK8244	HEAD AMP U.	NV-DS77
638	VYK8886	HEAD AMP U.	NV-DS99/990,NV-DS33
638	VYK9102	HEAD AMP U.	NV-EX3
621	VSC4802	SHIELD CASE	NV-EX1
621	VSC4758	SHIELD CASE	NV-DS77,NV-DS99/990,NV-DS33
639	VMA9926	CAPSTAN HOLDER	NV-EX1,NV-DS77,NV-DS99/990,NV-DS33
B601	VHD1155	SCREW	
B602	VHD1372	SCREW	
B603	VHD1372	SCREW	
B604	VHD1372	SCREW	
B606	VHD1160	SCREW	
B608	VHD1160	SCREW	
B609	VHD1406	SCREW	
B610	VHD1161	SCREW	
B611	VHD1161	SCREW	
B612	VHD1161	SCREW	
B613	VHD1161	SCREW	
B614	VHD1161	SCREW	

B615	VHD1162	SCREW	
B616	VHD1162	SCREW	
B619	VHD1163	SCREW	
B621	XQN12+B1	SCREW	
B622	XQN12+A1	SCREW	
B623	XQN12+A1	SCREW	
B624	XQN12+A1	SCREW	
B625	XQN12+A1	SCREW	
B626	XQN12+A1	SCREW	
B627	XQN12+A12FN	SCREW	
B628	XQN12+A12FN	SCREW	
B631	XQN12+B2	SCREW	
B632	VHD1162	SCREW	NV-EX1,NV-DS77,NV-DS99/990,NV-DS33
B633	VHD1162	SCREW	NV-EX1,NV-DS77,NV-DS99/990,NV-DS33
B634	XQN16+B12	SCREW	NV-EX1,NV-DS77,NV-DS99/990,NV-DS33
N601	VHN0324	NUT	
W601	VMX2028	WASHER	
W602	VMX2751	WASHER	
W603	VMX2752	WASHER	
W604	VMX2392	WASHER	
W605	VMX2028	WASHER	
W606	VMX2028	WASHER	
W607	VMX2028	WASHER	
W608	VMX2028	WASHER	
W609	VMX2028	WASHER	
W610	VMX2028	WASHER	
W611	VMX2028	WASHER	

TOP PREVIOUS NEXT

7.2 Q1& Q2 VCR MECHANISM SECTION (2) PARTS LIST

TOP PREVIOUS NEXT

Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark: △ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
651	VMD2975	LED HOLDER	
652	VXA6537	SUB SHASSIS U.	NV-DS99/990,NV-DS33,NV-EX3
652	VXA6146	SUB SHASSIS U.	NV-EX1,NV-DS77
653	VXA6151	COVER PLATE U.	
654	VXA6159	CASSETTE UP U.	
B651	VHD1162	SCREW	
B652	VHD1162	SCREW	
B653	VHD1162	SCREW	
B654	VHD1162	SCREW	
B655	VHD1207	SCREW	
B656	VHD1164	SCREW	
B657	VHD1164	SCREW	
B658	VHD1171	SCREW	
B659	VHD1314	SCREW	
B660	VHD1314	SCREW	
B661	VHD1163	SCREW	
B662	VHD1163	SCREW	

TOP PREVIOUS NEXT

7.3 Q3 VCR MECHANISM SECTION (1) PARTS LIST

TOP PREVIOUS NEXT

Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark △ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
501	VEG1570	CYLINDER U.	NV-EX21,NV-DS68/88/89/25/12/15/150,NV-MX2/8/300/1/3/5/7
501	VEG1495	CYLINDER U.	NV-DS35/55
502	DFX25A7VWC	CAPSTAN U.	NV-EX21,NV-DS68/88/89/25/12/15/150,NV-MX2/8/300/1/3/5/7
502	DFX25A7VWB	CAPSTAN U.	NV-DS35/55
503	VDG1284	DRIVE GEAR	
504	VDG1285	CENTER GEAR	
505	VDG1290	INTERFACE GEAR (C)	
506	VDG1291	INTERFACE GEAR (D)	
507	VDG1330	DECELERATION GEAR (A)	
508	VDG1331	DECELERATION GEAR (B)	
509	VDG1297	INTERFACE GEAR (A)	
510	VDG1303	INTERFACE GEAR (B)	
512	VMA9908	PULLEY COVER	
513	VMA9916	T4 GUIDE	
514	VMA9917	TENSION PLATE	
515	VMA0E52	GEAR COVER	
516	VHD1430	CAPSTAN HOLDER	
517	VMC1443	CYLINDER SPRING	
519	VEM0679	LOADING MOTOR U.	
520	VWJ1297	MECHANISM INTERFACE FLEX.	
521	VMP6271	RT FLEX. FRAME	NV-EX21,NV-DS68/88/89/25/12/15/150,NV-MX2/8/300/1/3/5/7
522	K0ZZ00000453	MODE SWITCH	
523	VXA6124	S LOAD GEAR U.	
524	VXA6125	T LOAD GEAR U.	

525	VXA6133	PULLEY	
526	VXA6134	CHASSIS RADON U.	
527	VXA6135	CAM GEAR U.	
528	VXA6136	PINCH BEETLE	
529	VXA6137	RELEASE BEETLE	
530	VXA6138	RAIL U.	
531	VXA6169	BOAT RADON U.	
532	VXA6184	S3 BASE U.	
533	VXL2814	EJECT LEVER U.	
534	VXL2815	TENSION LEVER U.	
535	VXL2816	EJECT ARM U.	
536	VXL2897	PINCH ARM U.	
537	VXL2818	IDLER U.	
538	VYK8886	HEAD AMP U.	NV-DS35/55
B501	VHD1155	SCREW	
B502	VHD1372	SCREW	
B503	VHD1372	SCREW	
B504	VHD1372	SCREW	
B505	XQN14+B1FN	SCREW	NV-EX21,NV-DS68/88/89/25/12/15/150,NV-MX2/8/300/1/3/5/7
B506	VHD1160	SCREW	
B508	VHD1160	SCREW	
B509	VHD1406	SCREW	
B510	VHD1161	SCREW	
B511	VHD1161	SCREW	
B512	VHD1161	SCREW	
B513	VHD1161	SCREW	
B514	VHD1161	SCREW	
B515	VHD1162	SCREW	
B516	VHD1162	SCREW	
B519	VHD1163	SCREW	
B521	XQN12+B1	SCREW	
B522	XQN12+A1	SCREW	

MC-Service

B523	XQN12+A1	SCREW	
B524	XQN12+A1	SCREW	
B525	XQN12+A1	SCREW	
B526	XQN12+A1	SCREW	
B527	XQN12+A12FN	SCREW	
B528	XQN12+A12FN	SCREW	
B530	XQN16+B2	SCREW	
B535	XQN16+B3	SCREW	NV-DS35/55
N501	VHN0324	NUT	
W501	VMX2028	WASHER	
W502	VMX2028	WASHER	
W503	VMX2028	WASHER	
W504	VMX2028	WASHER	
W505	VMX2028	WASHER	
W506	VMX2028	WASHER	
W507	VMX2028	WASHER	
W508	VMX2751	WASHER	
W509	VMX2752	WASHER	
W510	VMX2392	WASHER	
W511	VMX2028	WASHER	

TOP PREVIOUS NEXT

7.4 Q3 VCR MECHANISM SECTION (2) PARTS LIST

TOP PREVIOUS

Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark △ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Remarks
551	VMD2975	LED HOLDER	
552	VXA6537	SUB CHASSIS U.	
553	VXA6151	COVER PLATE U.	
554	VXA6159	CASSETTE UP U.	
B551	VHD1162	SCREW	
B552	VHD1162	SCREW	
B553	VHD1162	SCREW	
B554	VHD1162	SCREW	
B555	VHD1207	SCREW	
B556	VHD1164	SCREW	
B557	VHD1164	SCREW	
B558	VHD1171	SCREW	
B559	VHD1314	SCREW	
B560	VHD1314	SCREW	
B561	VHD1163	SCREW	
B562	VHD1163	SCREW	

TOP PREVIOUS